
INPUT

VENDOR ANALYSIS
PROGRAM



**TDS HEALTHCARE SYSTEMS
CORPORATION**

200 Ashford Center North
Atlanta, GA 30338
Phone: (404) 847-5000
Fax: (404) 847-5700

Chairman: John J. Whitehead
President: Eugene Santa Cattarina
Status: Subsidiary
Parent: ALLTEL Corporation
Total Employees: 550
Total Revenue: \$75,000,000*
Fiscal Year End 12/31/92

*INPUT estimate

Key Points

- TDS Healthcare Systems Corporation (TDS) faces a significant challenge in moving its products from mainframe-based turnkey systems to the open distributed architecture increasingly requested in health care markets.
- ALLTEL corporation announced on August 31, 1993 that it had signed a definitive agreement to acquire TDS Healthcare Systems Corp. TDS will be operated under Systematics Healthcare Services, Inc. a newly formed subsidiary of ALLTEL's Systematics Information Services. Under the terms of the agreement, which will be accounted for as a pooling of interests, ALLTEL will exchange 2.0 million ALLTEL common shares for all outstanding shares of TDS' capital stock. Pending receipt of necessary approvals, ALLTEL expects to complete the acquisition later this year.
- TDS is well positioned with its design of a single, integrated Permanent Patient Record (PPR) to address critical patient record issues in the health care market.
- TDS products have high user satisfaction with their current functionality and efficiency in dealing with patient information.

Company Description

TDS Healthcare Systems Corporation (TDS) provides application software products and processing services for health care information management to hospitals.

- TDS originated in 1964 as the health care information services division of Lockheed Corp., which was purchased by Technicon Corporation in 1971 and renamed Technicon Data Systems. In 1980, the company was acquired by Revlon Corporation.
- In 1985, Revlon was acquired in a leveraged buy out by Pantry Pride, which began efforts to sell individual operating units.
- In 1986, Technicon Data Systems was purchased from Pantry Pride by John J. Whitehead. The company was renamed and officially launched as TDS Healthcare Systems Corporation in 1987. The acquisition and financing was handled entirely by the Whitehead family.

Operations/Structure

TDS principal offices are as follows:

- TDS Corporate and North American Division headquarters are located in Atlanta.
- A research and development facility is located in San Jose (CA).
- The Federal Systems Division is headquartered in Rockville (MD).
- The International Division is headquartered in London.

Additional offices are located throughout the U.S., Europe, and in Canada. TDS markets its products through a direct sales force located in the U.S., Europe, and Canada.

Strategy

TDS plans to aggressively pursue its expansion in Europe. Currently TDS products are available in English and French versions.

Financials

INPUT estimates TDS' 1992 revenue was approximately \$75 million.

Competition

Major competitors include Shared Medical Systems, HBO & Company, IBAX Healthcare, and First Data Corporation.

Key Products and Services

INPUT estimates TDS' 1992 revenue was derived approximately as follows:

Software product licenses	86%
Processing services	5%
Hardware maintenance services	9%
	100%

TDS 7000 Series^R

The TDS 7000 Series is TDS' family of health care information systems with full functional support for physicians, nurses, and other clinicians, based on a single, integrated Permanent Patient Record.

- The Permanent Patient Record can maintain as many as 16 million individual, lifetime records, integrating information from inpatient and outpatient activities. This information can be accessed on-line in real-time from anywhere in a hospital or health care delivery system.
- All models in the TDS 7000 Series include four fully integrated modules as follows:
 - The Healthcare Module includes the Permanent Patient Record and is the core of the entire information system. It is a data collection, distribution, and management module that captures all patient care information at the point of care.
 - The Health Management Module includes an Advanced Medical Records Application and a Patient Accounting Application that automates all hospital billing and collections functions.
 - The General Financial Module automates and integrates financial applications, including general ledger, asset management, budgeting, inventory, payables, purchasing, and human resources.
 - The Decision Support Module provides analytical tools and modeling capabilities that include cost accounting, case mix, budgeting, and productivity analysis.
- The TDS 7000 Series runs on IBM 43XX or 30XX series systems under VSE and MVS and supports IBM's SNA. The TDS 7000 Series is available in several models to clients as an in-house system or as a processing service.
- The Model 7800 is generally suited for 500+ bed facilities, multihospital groups, and organizations with large outpatient

volumes. The Model 7800 client licenses the system and can choose to process at the hospital's data center or contract for processing services from TDS.

- The Model 7600 is configured for medium-sized (generally 350-500 bed) facilities. The Model 7600 client licenses the system and can choose to process at the hospital's data center or contract for processing services from TDS.
- The Model 7400 is designed for small-to-medium-sized (generally 150-400 bed) facilities. This product is delivered on-line, real-time via remote processing from a TDS data center for a fixed monthly fee.
- The TDS 7000 Series was released in August 1990 as the successor to the TDS HealthCare 4000 System. TDS continues to support the TDS HealthCare 4000 System as its clients migrate to the TDS 7000 Series.
- TDS currently has its systems installed at 200+ client sites. Approximately 30% of TDS' clients currently run the system remotely-either from one of the TDS data centers, from commercial data centers, or from data centers established by individual users to support multiple sites.

TDS Services

TDS provides installation consulting services to assist customers throughout the implementation process, providing implementation teams, support and user training.

TDS will also provide systems operations on an outsourcing or remote basis from regionally located TDS data centers.

Clients

TDS has built a client base of more than 200 facilities that include university, community, specialty hospitals and multi hospital systems in the United States, Canada, the United Kingdom, and Continental Europe.

Industry Markets

Virtually all of TDS 1992 revenue was derived from community, university/teaching, and government hospitals and multihospital systems.

TDS will continue to expand its product offerings to meet the needs of all health care facility market segments.

**Geographic
Markets**

Approximately 90% of TDS 1992 revenue was derived from the U.S. and 10% from international sources.

**TDS HEALTHCARE SYSTEMS
CORPORATION**

200 Ashford Center North
Atlanta, GA 30338
Phone: (404) 847-5000
Fax: (404) 847-5700

Chairman: John J. Whitehead
President: Eugene Santa Cattarina
Status: Private Corporation
Total Employees: 550
Total Revenue: \$85,00,000*
Fiscal Year End 12/31/92

*INPUT estimate

Key Points

- TDS Healthcare Systems Corporation (TDS) faces a significant challenge in moving its products from mainframe-based turnkey systems to the open distributed architecture increasingly requested in health care markets.
- TDS is well positioned with its design of a single, integrated Permanent Patient Record (PPR) to address critical patient record issues in the health care market.
- TDS products have high user satisfaction with their current functionality and efficiency in dealing with patient information.

**Company
Description**

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- TDS originated in 1964 as the health care information services division of Lockheed Corp., which was purchased by Technicon Corporation in 1971 and renamed Technicon Data Systems. In 1980, the company was acquired by Revlon Corporation.
- In 1985, Revlon was acquired in a leveraged buy out by Pantry Pride, which began efforts to sell individual operating units.
- In 1986, Technicon Data Systems was purchased from Pantry Pride by John J. Whitehead. The company was renamed and officially launched as TDS Healthcare Systems Corporation in 1987. The acquisition and financing was handled entirely by the Whitehead family.

**Operations/
Structure**

TDS principal offices are as follows:

- TDS Corporate and North American Division headquarters are located in Atlanta.
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Additional offices are located throughout the U.S., Europe, and in Canada. TDS markets its products through a direct sales force located in the U.S., Europe, and Canada.

Strategy

TDS plans to aggressively pursue its expansion in Europe. Currently TDS products are available in English and French versions.

Financials

INPUT estimates TDS's 1992 revenue was approximately \$85 million.

Competition

Major competitors include Shared Medical Systems, HBO & Company, IBAX Healthcare, and First Data Corporation.

Key Products and Services

INPUT estimates TDS's 1992 revenue was derived approximately as follows:

Software product licenses	86%
Processing services	5%
Hardware maintenance services	9%
	100%

TDS 7000 Series^R

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- The Permanent Patient Record can maintain as many as 16 million individual, lifetime records, integrating information from inpatient and outpatient activities. This information can be accessed on-line in real-time from anywhere in a hospital or health care delivery system.
- All models in the TDS 7000 Series include four fully integrated modules as follows:
 - The Healthcare Module includes the Permanent Patient Record and is the core of the entire information system. It is a data collection, distribution, and management module that captures all patient care information at the point of care.
 - The Health Management Module includes an Advanced Medical Records Application and a Patient Accounting Application that automates all hospital billing and collections functions.
 - The General Financial Module automates and integrates financial applications, including general ledger, asset management, budgeting, inventory, payables, purchasing, and human resources.
 - The Decision Support Module provides analytical tools and modeling capabilities that include cost accounting, case mix, budgeting, and productivity analysis.
- The TDS 7000 Series runs on IBM 43XX or 30XX series systems under VSE and MVS and supports IBM's SNA. The TDS 7000 Series is available in several models to clients as an in-house system or as a processing service.
- The Model 7800 is generally suited for 500+ bed facilities, multihospital groups, and organizations with large outpatient

volumes. The Model 7800 client licenses the system and can choose to process at the hospital's data center or contract for processing services from TDS.

- The Model 7600 is configured for medium-sized (generally 350-500 bed) facilities. The Model 7600 client licenses the system and can choose to process at the hospital's data center or contract for processing services from TDS.
- The Model 7400 is designed for small-to-medium-sized (generally 150-400 bed) facilities. This product is delivered on-line, real-time via remote processing from a TDS data center for a fixed monthly fee.
- The TDS 7000 Series was released in August 1990 as the successor to the TDS HealthCare 4000 System. TDS continues to support the TDS HealthCare 4000 System as its clients migrate to the TDS 7000 Series.
- TDS currently has its systems installed at 200+ client sites. Approximately 30% of TDS' clients currently run the system remotely-either from one of the TDS data centers, from commercial data centers, or from data centers established by individual users to support multiple sites.

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TDS provides installation consulting services to assist customers throughout the implementation process, providing implementation teams, support and user training.

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Industry Markets

Virtually all of TDS 1992 revenue was derived from community, university/teaching, and government hospitals and multihospital systems.

TDS will continue to expand its product offerings to meet the needs of all health care facility market segments.

**Geographic
Markets**

Approximately 90% of TDS 1992 revenue was derived from the U.S. and 10% from international sources.

COMPANY PROFILE

TDS HEALTHCARE SYSTEMS CORPORATION

200 Ashford Center North
Atlanta, GA 30338
(404) 847-5000

John J. Whitehead, President
Private Corporation
Total Employees: 550
Total Revenue, Fiscal Year End
12/31/90: \$87,500,000*

*INPUT estimate

The Company

TDS Healthcare Systems Corporation (TDS) provides application software products and processing services for health care information management to hospitals.

- TDS originated in 1964 as the health care information services division of Lockheed Corp., which was purchased by Technicon Corporation in 1971 and renamed Technicon Data Systems. In 1980, the company was acquired by Revlon Corporation.
- In 1985, Revlon was acquired in a leveraged buyout by Pantry Pride, which began efforts to sell individual operating units.
- In 1986, Technicon Data Systems was purchased from Pantry Pride by John J. Whitehead. The company was renamed and officially launched as TDS Healthcare Systems Corporation in 1987. The acquisition and financing was handled entirely by the Whitehead family.

INPUT estimates TDS' 1990 revenue reached \$87.5 million, an 18% increase over 1989 revenue of \$75 million.

Major competitors include Shared Medical Systems, HealthQuest (HBO & Company), and Spectrum Healthcare Solutions.

Key Products and Services

INPUT estimates TDS' 1990 revenue was derived approximately as follows:

Software product licenses	86%
Processing services	5%
Hardware maintenance services	<u>9%</u>
	100%

The TDS 7000 Series is TDS' family of health care information systems with full functional support for physicians, nurses, and

clinicians, based on a single, integrated Permanent Patient Record.

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 - The Health Management Module includes an Advanced Medical Records Application and a Patient Accounting Application that automates all hospital billing and collections functions.
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 - The Model 7800 is generally suited for 500+ bed facilities, multihospital groups, and organizations with large outpatient volumes. The Model 7800 client licenses the system and can choose to process at the hospital's data center or contract for processing services from TDS.
 - The Model 7600 is configured for medium-sized (generally 350-500 bed) facilities. The Model 7600 client licenses the system and can choose to process at the hospital's data center or contract for processing services from TDS.

- The Model 7400 is designed for small-to-medium-sized (generally 150-400 bed) facilities. This product is delivered on-line, real-time via remote processing from a TDS data center for a fixed monthly fee.
- The TDS 7000 Series was released in August 1990 as the successor to TDS' HealthCare 4000 System. TDS continues to support the TDS HealthCare 4000 System as its clients migrate to the TDS 7000 Series.
- TDS currently has its systems installed at 181 client sites. Approximately 30% of TDS' clients currently run the system remotely--either from one of TDS' data centers, commercial data centers, or from data centers established by individual users to support multiple sites.

TDS also provides hardware maintenance services.

Industry Markets

Virtually all of TDS' 1990 revenue was derived from health care facilities.

TDS will continue to expand its product offerings to meet the needs of all health care facility market segments.

Geographic Markets

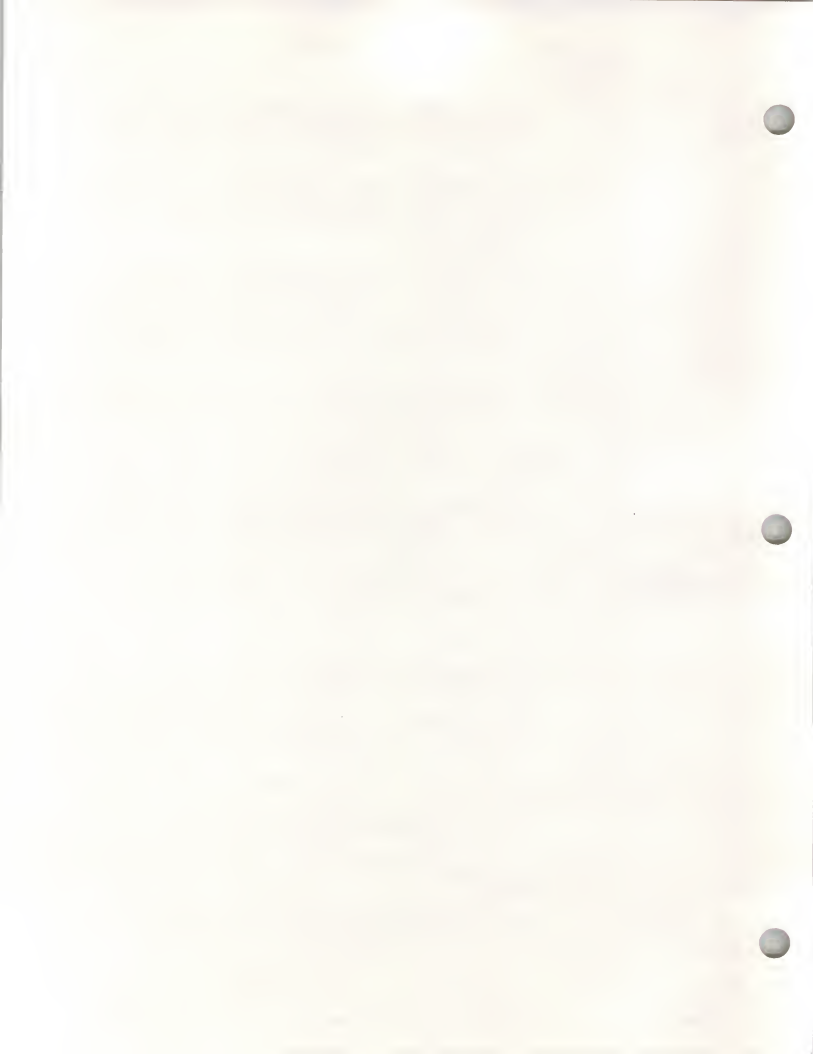
Approximately 96% of TDS' 1990 revenue was derived from the U.S. and 4% from international sources.

TDS principal offices are as follows:

- TDS' corporate and North American Division headquarters is located in Atlanta.
- A research and development facility is located in San Jose (CA).
- The Federal Systems Division is headquartered in Rockville (MD).
- The International Division is headquartered in London.

Additional offices are located throughout the U.S., Europe, and in Canada.

TDS plans to aggressively pursue its expansion in Europe.



COMPANY PROFILE

TDS HEALTHCARE SYSTEMS CORPORATION

200 Ashford Center North
Atlanta, GA 30338
(404) 847-5000

John J. Whitehead, President
Private Corporation
Total Employees: 625
Total Revenue, Fiscal Year End
12/31/89: \$75,000,000

The Company

TDS Healthcare Systems Corporation (TDS) provides application software products and processing services for health care information management to hospitals.

- TDS originated in 1964 as the health care information services division of Lockheed Corp., which was purchased by Technicon Corporation in 1971 and renamed Technicon Data Systems. In 1980, the company was acquired by Revlon Corporation.
- In 1985, Revlon was acquired in a leveraged buyout by Pantry Pride, which began efforts to sell individual operating units.
- In 1986, Technicon Data Systems was purchased from Pantry Pride by John J. Whitehead. The company was renamed and officially launched as TDS Healthcare Systems Corporation in 1987. The acquisition and financing was handled entirely by the Whitehead family.

Major competitors include Shared Medical Systems, HBO & Company, and Spectrum.

Key Products and Services

INPUT estimates TDS' 1989 revenue was derived approximately as follows:

Software product licenses	86%
Processing services	5%
Hardware maintenance services	9%
	100%

The TDS 7000 Series is TDS' family of health care information systems with full functional support for physicians, nurses, and clinicians, based on a single, integrated Permanent Patient Record.

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 - The Model 7400 is designed for small-to-medium sized (generally 150-400 bed) facilities. This product is delivered on-line, real-time via remote processing from a TDS data center for a fixed monthly fee.

- The TDS 7000 Series was released in August 1990 as the successor to TDS' HealthCare 4000 System. TDS continues to support the TDS HealthCare 4000 System as its over 160 sites migrate to the TDS 7000 Series.
- TDS currently has its systems installed at 168 client sites. Approximately 30% of TDS' clients currently run the system remotely--either from one of TDS' data centers, commercial data centers, or from data centers established by individual users to support multiple sites.

TDS also provides hardware maintenance services.

Industry Markets

Virtually all of TDS' 1989 revenue was derived from health care facilities.

TDS will continue to expand its product offerings to meet the needs of all health care facility market segments.

Geographic Markets

Approximately 96% (\$72 million) of TDS' 1989 revenue was derived from the U.S. and 4% (\$3 million) from international sources.

TDS principal offices are as follows:

- TDS' corporate and North American Division headquarters is located in Atlanta.
- A research and development facility is located in San Jose (CA).
- The Federal Systems Division is headquartered in Rockville (MD).
- The International Division is headquartered in London.

Additional offices are located throughout the U.S., Europe, and in Canada.

TDS plans to aggressively pursue its expansion in Europe.

COMPANY PROFILE

TDS HEALTHCARE SYSTEMS CORPORATION
(formerly Technicon Data Systems Corporation)
5887 Glenridge Drive
Atlanta, GA 30328
(404) 847-5000

John J. Whitehead, President
Private Corporation
Total Employees: 550
Total Revenue, Fiscal Year End
12/31/87: \$50,000,000*
Information Services Revenue:
\$40,000,000*

THE COMPANY

- TDS Healthcare Systems Corporation (TDS) provides processing services, software products, turnkey systems, and professional services to the health care industry in the IBM mainframe environment. TDS also markets and leases terminals.
 - TDS originated in 1964 as the Medical Information Systems division of Lockheed Missiles and Space Company, and was purchased by Technicon Corporation in 1971 and renamed Technicon Data Systems. In 1980 Technicon Corporation was purchased by Revlon Inc.
 - In August 1986, the Technicon Data Systems division of Technicon was purchased from the Revlon Group by Technicon Acquisition Corporation, a company formed and owned by John J. Whitehead.
 - In March 1987, the company was renamed TDS Healthcare Systems Corporation and became a privately held corporation.
- As of December 31, 1987, TDS employed approximately 550 persons.
- Major competitors include Shared Medical Systems, Datacare, Electronic Data Systems, IBM, HBO & Company, and Baxter Healthcare Corporation.

KEY PRODUCTS AND SERVICES

- Approximately 80% of 1987 revenue was derived from information services and 20% from terminal sales and leasing.
 - The majority of information services revenue was derived from applications software, followed by turnkey systems and professional services. A small percent was derived from remote computing processing services.
- The TDS HealthCare 4000 System is TDS's primary software product offering. HC4000, formerly marketed as the Medical Information System (MIS)

* Company estimate

TDS HEALTHCARE SYSTEMS CORPORATION

automated hospital information system, is designed primarily for hospitals with 300 or more beds.

- HC4000 runs on IBM mainframes and ranges in price from \$500,000 to over \$1 million.
- HC4000 consists of three modules as follows:
 - The HealthCare module includes:
 - Patient Administration.
 - Medical Records.
 - Patient Care.
 - Patient Accounting (PAA) can be included in the module or can be purchased separately as a standalone application.
 - Currently there are 50 PAA module installations.
 - The General Financial module includes:
 - General Ledger.
 - Accounts Payable.
 - Human Resources.
 - Materials Management.
 - Fixed Assets.
 - The Decision Support module includes:
 - Case Mix.
 - Cost Accounting.
 - Marketing and competition.
- Currently there are approximately 90 installations of the TDS hospital information system.
- Customization of HC4000 to individual users is provided by coding tables and matrices that identify information to be displayed on the CRT screen.
- TDS markets a proprietary terminal to HC4000 customers and on IBM PCs that permit users to enter commands through a light pen menu selection process.
- Professional services consulting available to TDS clients includes cost/benefit analysis, on-site project management, software implementation, and training. These services are generally provided to clients in conjunction with purchases of software or turnkey systems.
- TDS provides remote processing services to its clients by offering access to TDS's network HC4000 and PAA.

TDS HEALTHCARE SYSTEMS CORPORATION

- TDS operates one data center in Santa Clara (CA).
- Processing services contributed a very small percent to total 1987 revenue.
- TDS markets and leases hardware and software and provides maintenance services.

INDUSTRY MARKETS

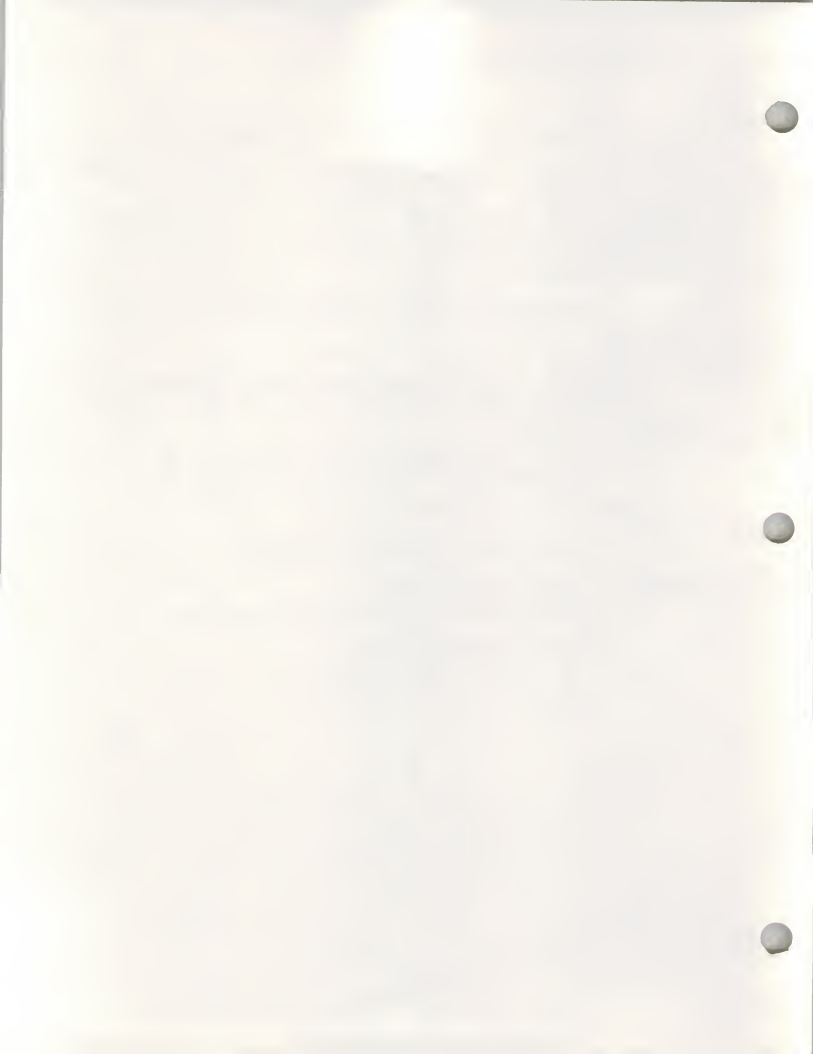
- One hundred percent of TDS's 1987 revenue was derived from the medical/hospital industry.
- Currently TDS serves more than 85 hospitals.
- TDS clients range in size from a 40-bed rural hospital to a 1,100-bed metropolitan medical center.

GEOGRAPHIC MARKETS

- TDS's 1987 revenue was derived from the U.S., Canada, and the U.K.
- Regional offices are located in Rockville (MD), Chicago, and Santa Clara (CA).
- International offices are located in Toronto and London.

COMPUTER HARDWARE AND SOFTWARE

- The following computers are installed at TDS's Santa Clara data center:
 - 2 IBM 4341s, DOS/VS(E), VM/CMS.
 - 1 IBM 370/158, DOS/VS(E), VM/CMS.
- Clients access TDS's network via leased lines.



COMPANY HIGHLIGHT

TMI SYSTEMS CORPORATION

83 Hartwell Avenue
Lexington, MA 02173
(617) 861-7700

C. Wade Tambor, President
Private Corporation
Number of Employees: 160
Revenue, Fiscal Year
End 6/30/81: \$8,724,000

THE COMPANY

- TMI Systems Corporation (TMI), founded in 1969, provides remote computing services, software packages, and custom systems to commercial banks, corporate and institutional investors, thrift institutions, and government financial organizations.
- TMI's revenue as of June 30, 1981, was \$8.7 million. TMI management states the company is profitable.
- The 160 employees of TMI are divided as follows:

- Marketing and sales	10
- Software services and customer support	85
- Computer operations	40
- General and administrative	<u>25</u>
	160

KEY PRODUCTS AND SERVICES

- TMI revenues are derived as follows:

- Processing services	35%
- Software products	40
- Professional services	<u>25</u>
	100%
- Remote computing revenues are derived from TMI's FUNDTRAC product provided on a timesharing basis from TMI's IBM data center and from an off-site DEC-10 facility which is made available via an international network.
- Application areas in which TMI specializes include:
 - Investment and trading management.
 - Domestic and international money transfer.
 - Securities clearance.

- Corporate cash management.
 - Message switching and communications.
 - Transaction processing systems.
 - Bank operations and check processing.
 - Back office management training.
- TMI offers a number of software packages which operate on both IBM and DEC hardware. Over 100 packages have been sold. Products marketed are:
 - BANKSWITCH: a line of integrated message switching communications interface systems for large banking institutions. Available since 1978, Bankswitch is installed in 15 locations and runs on DEC PDP 11, RSX-11M hardware.
 - Bond Analysis System (BAS): provides historical data analysis, yield and spread monitoring, yield curve analysis, swap analysis, and performance measurement of various types of bonds. First offered in 1976, TMI has six BAS systems installed.
 - FTX and TRANSFER, funds transfer and cash position management systems: provides automated access to FEDWIRE, BANKWIRE, and other funds transfer networks. Marketed since 1980, seven systems are installed on both IBM and DEC equipment.
 - FUNDTRAC: provides fixed income and equity securities processing for investment management, dealer trading, accounting and performance measurement. Available since 1973, there are fifty installations of FUNDTRAC.
 - International Money Management System (IMMS): for multi-currency investments and cash management. Introduced in 1979, IMMS operates on the DEC PDP11 system and has two installations.
 - TMX: a transaction and resource management system for DEC PDP11 and VAX computers. First introduced in 1976, TMX has fifty installations.
 - TPD: a bank back-office operation game first marketed in 1972. It has five installations and operates on the DEC System 10.
 - TMI began offering systems in 1971 and was one of the first companies to use a minicomputer for financial transaction processing in the banking industry.

INDUSTRY MARKETS

- TMI's client base includes 18 of the 20 largest commercial banks in the United States. The breakdown of TMI's revenue by industry is as follows:

TMI SYSTEMS CORPORATION

- Money centers, regional and international banks	50%
- Government financial institutions and central banks	10
- Corporations and thrift institutions	15
- Investment advisors, institutional investors, broker/ dealers and arbitragers	<u>25</u>
	100%

GEOGRAPHIC MARKETS

- Eighty-five percent of TMI's revenues are derived from the U.S., with the remaining 15% from Europe and the Middle East. Following is an estimate of revenues from specific geographic areas:

- New England	15%
- Middle Atlantic	50
- East North Central	5
- West South Central	5
- Pacific	10
- Europe	10
- Middle East/Asia	<u>5</u>
	100%

- Sales offices are maintained in Boston, Dallas, New York, and San Francisco.

COMPUTER HARDWARE

- At its Lexington, MA, and New York offices TMI maintains the following equipment.
 - 4 DEC PDP 11-70, RSX-11M.
 - 1 DEC VAX, VMS.
 - 2 IBM 4331, VM/CMS.

Collin Scarborough
V-P

COMPANY HIGHLIGHT

TMI SYSTEMS CORPORATION

One Broadway
Cambridge, MA 02140
(617) 492-6520

C. Wade Tambor, President
Private corporation
Total Employees: 125
Revenue, Fiscal Year End 6/30/79:
\$7,250,000*

THE COMPANY

- TMI Systems was formed in 1969 as Technology Management, Inc., to provide consulting and systems development services. In 1976 the company changed its name to TMI Systems Corporation.
- TMI currently markets turnkey systems and software packages to commercial banks, corporate and institutional investors, thrift institutions, and government financial organizations.
- INPUT estimates TMI's revenue as of June 30, 1979, was approximately \$7.25 million. TMI management states the company is profitable.
- The 125 employees of TMI are divided as follows:

-	Marketing	5
-	Software services	90
-	Customer support	10
-	Administrative	<u>20</u>
		125

KEY PRODUCTS AND SERVICES

- Approximately 40% of TMI's revenues are derived from turnkey systems, 20% from software product sales, 20% from remote computing services, and 20% from professional services.
- Remote computing revenues are derived from a contractual arrangement with Applied Logic of Boston which makes some of the TMI software available on Applied Logic's network.
- Application areas in which TMI specializes include:
 - Investment and Trading Management.
 - Domestic and International Money Transfer.
 - Securities Clearance.

* INPUT estimate

COMPANY HIGHLIGHT/TMI SYSTEMS CORPORATION

- Foreign Exchange.
 - Letter of Credit Systems.
 - Wholesale Bank Operations.
 - Retail Banking.
- TMI offers a number of software packages in the money management and bank operations areas. These are:
 - FUNDTRAC: provides fixed income and equity securities processing for investment management, dealer trading, accounting and performance measurement.
 - BAS, Bond Analysis System: provides historical data analysis, yield and spread monitoring, yield curve analysis, swap analysis, and performance measurement of various types of bonds.
 - IMMS, International Money Management System: for multi currency investments and cash management.
 - FEDCLEAR: provides a clearance system designed to reduce cost and increase control over Federal Reserve book entry clearances.
 - FTX, Funds Transfer System: provides automatic access to FEDWIRE, BANKWIRE, and other fund transfer networks.
 - FX, Foreign Exchange: provides transaction monitoring, ticket preparation, and current currency positions for foreign exchange trading operations.
 - WORKSIM, Work Simulation: provides a simulation model for check processing operations analysis.
 - CuSERV: provides a personnel scheduling model to determine the optimum staffing levels and detail job schedules for teller stations, work stations, selling departments, etc.
 - BANKSWITCH-II: an integrated message switching - communications interface system for large banking institutions.
 - TMX-II: transaction manager under RSX-II for PDP-II computers.
 - LOC, Letter of Credit System for International banks.
 - SCAN and CAPS: for consumer credit analysis and application processing based on credit scoring techniques.
 - TMI's software will operate on IBM and DEC hardware.
 - TMI began offering turnkey systems in 1971 and was one of the first companies to use a minicomputer for financial transaction processing in the banking industry.
 - A key element of TMI's turnkey system is TMX-II. TMX-II is a transaction processing executive and resource manager for PDP-II's which uses the facilities of DEC's RSX-11M operating system to control memory utilization, data base management, and terminal operations in a transaction processing environment. TMX-II incorporates the facilities of Cincom's TOTAL for file management functions and will also support DEC's RMS-11K for file management, and DEC's RMS11-K multikey ISAM facility.

COMPANY HIGHLIGHT/TMI SYSTEMS CORPORATION

- TMI customizes their software packages and combines them with DEC or IBM minicomputers as turnkey systems. Price of the turnkey system varies widely depending on applications and hardware selected, and the amount of customization required by the client.
- TMI has 35 turnkey installations, primarily in commercial banks.

INDUSTRY MARKETS

- Approximately 85% of TMI's revenues are derived from the banking and finance industry with the remainder coming from manufacturing and government financial institutions.

GEOGRAPHIC MARKETS

- One hundred percent of TMI's revenues are derived from the U.S. Following is an estimate of revenues received from geographic areas:

New England	25%
Middle Atlantic	25
East North Central	5
West North Central	3
South Atlantic	10
East South Central	3
West South Central	10
Mountain	3
Pacific	<u>16</u>
	100%

- Sales office are maintained in Boston, Dallas, New York, and San Francisco. In 1980, TMI plans to move its corporate offices to Lexington, Massachusetts.

COMPUTER HARDWARE TMI maintains research and development computer facilities at its Cambridge, Massachusetts and New York offices.



COMPANY PROFILE

TRW INFORMATION SERVICES

505 City Parkway West
Orange, CA 92668
(714) 385-7000

Edward F. Freeman, Vice President and
General Manager
Division of TRW, Inc.
Total Employees: 1,800
Total Revenue, Fiscal Year End
12/31/87: \$141,000,000*

*INPUT estimate

The Company

TRW Information Services Division (ISD), formed in 1969, provides consumer credit, business credit, and marketing information through a nationwide on-line inquiry/response system and other computerized services. ISD is a division of the TRW Information Systems Group, a part of TRW, Inc.

ISD is composed of three business segments, as follows:

- TRW Credit Data was formed in November 1969 when TRW acquired the Detroit-based Credit Data Corporation. Credit Data Corporation, founded in 1932, installed the first on-line consumer credit reporting system in 1965.
- TRW Business Credit Services was formed after ISD completed a two-year study of the business credit reporting market. The service went on-line in 1976. TRW expanded this unit's product line to include business-to-business direct marketing services, referred to as TRW Business Information Services.
- TRW Target Marketing Services (formerly TRW Direct Marketing Services) was formed in 1986 in order to further leverage the information in the TRW consumer credit data base. The unit provides direct marketing products and services to business-to-consumer direct marketers.

INPUT estimates ISD's 1987 revenue reached \$141 million, a 13% increase over estimated 1986 revenue of \$125 million. INPUT estimates that ISD's 1988 revenue will reach \$160 million. A five-year summary of estimated revenue follows:

**TRW INFORMATION SERVICES
FIVE-YEAR ESTIMATED REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR				
	1987	1986	1985	1984	1983
Total Revenue	\$141.0	\$125.0	\$110.0	\$100.0	\$90.0
• Percent increase from previous year	13%	14%	10%	11%	25%

The division has grown over the last two years through the opening of new offices and the acquisition of other credit bureaus. Recent acquisitions include:

- In the fall of 1987, ISD acquired Executive Services of Richardson (TX). Executive Services provided direct marketing services, including computerized direct mail, mail lists, and demographics.
- In April 1988, ISD acquired the Credit Bureau of Salt Lake City, a provider of credit information services with offices in Wyoming and Utah.
- In April 1988, ISD also acquired South Carolina CreditData Corporation, a provider of credit reporting and consumer/business accounts receivable management services in Columbia (SC). The consumer credit reporting portion of CreditData's business was incorporated into ISD's credit reporting.

In general, the division competes with information providers in the credit and direct marketing industries, including credit bureaus, mailing list compilers, and computer services companies.

- TRW Credit Data's major competitors are TransUnion Credit Information Company; Credit Bureau Inc., a subsidiary of Equifax; Associated Credit Services Inc., a unit of Computer Sciences Corporation; and Chilton Corporation.
- TRW Business Credit Services competes with Dun & Bradstreet Credit Services, a unit of Dun & Bradstreet Business Information Services.

- TRW announced its intention to acquire Chilton from Borg-Warner Corporation in April 1988. The agreement is currently undergoing Justice Department approval, which is customary for this type of acquisition.

Key Products and Services

ISD derives virtually 100% of its revenue from on-line inquiry/response services related to consumer and business credit information and marketing services.

TRW Credit Data is one of the largest vendors of on-line consumer credit information, with more than 143 million consumers on file and 25,000 subscribers at 62,700 locations. Credit histories are accessed by banks, savings and loans, oil companies, retailers, finance companies, insurance companies, and other credit grantors.

- Subscribers to the service have access to a vast consumer credit data base, which is the basis for the TRW Updated Credit Profile. The Profile includes information about retail credit and bank charge accounts, lines of credit, secured loans, and finance company accounts. Selected public record information limited to tax liens, judgments, and bankruptcies is also available. The consumer's payment history for the past 12 months is listed, and all requests for Profile information are recorded and retained for a period of one year.
 - Open credit accounts remain on the file indefinitely. Closed accounts and adverse credit information are retained on the Profile for a maximum of seven years. Bankruptcy information is removed after 10 years.
 - Credit information is collected from subscribing credit grantors on a monthly basis, usually via magnetic tape or cartridge.
 - The cost of a Credit Profile for a credit grantor ranges from \$1.50 to \$5.00, depending on volume and access method.
- TRW Credit Data offers several products and services to aid credit grantors. These products and services include consumer credit reports, credit risk modeling services, account maintenance services, account risk control services, and account security services. In addition to providing custom modeling services, Credit Data offers the Gold Report. This enhanced credit report is generated by an on-line credit risk model that statistically

examines a consumer's credit history contained in TRW's data base for conditions that could indicate potential future delinquency or bankruptcy.

In order to ensure against credit fraud, TRW offers several security services, including DiscoverySM. This artificial intelligence system, unique in the credit reporting industry, protects consumer credit information stored in the TRW data base from unauthorized access. The Discovery system examines daily subscriber inquiry patterns, and through pattern recognition, detects any irregularity.

A typical TRW Business Profile Report costs from \$8 to \$12, with prices varying depending on the volume ordered and whether the customer is a contributor of information to the system.

- Profile reports encompass the following information:
 - Current payment experience, including:
 - Payment practice by industry category.
 - Exact dates of each trade line and last sales activity.
 - Payment terms being extended.
 - Recent high credit amounts allowed by suppliers.
 - Account balance, with detailed aging and delinquent accounts.
 - The Trade Line Industry Profile provides a line-by-line analysis of a company's payment performance compared to that particular industry's average.
 - The Composite Industry Profile summarizes a company's overall payment performance as compared to suppliers within industry groups.
 - The Six-Month Payment Trend provides separate balance and aging summaries for the most recent six-month period.
 - The Quarterly Credit Pattern summarizes trade experience for the most recent and four preceding calendar quarters.
 - The Current Payment Guide provides a total account balance range, overall payment performance comparison, and a payment trend.
 - Information on the name and location of the company's bank is available.

- Summary Business Data provides key information on over 360,000 U.S. businesses with 20 or more employees. Data includes product/service descriptions, revenue, number of employees, estimated market share, and ownership details.
- An inquiries report lists inquiries made to the subject's credit file during the past 90 days.
- Business and Financial Data is based on information provided by Standard and Poor's Corporation. Included are three years of comparative balance sheet and operating statement items, 11 critical ratios on 6,000 publicly held companies, in-depth analysis of 3,500 public companies, and summary information on over 50,000 public and private companies.
- TRW Business Information Services provides business-to-business information services to direct marketing firms and credit grantors. Information exchanged between businesses may include mail lists, a hot list of recent credit activity on people who have recently moved, model forecasting data, as well as prescreening services.
- Additional services include:
 - TRW Trade Payment Guide, published quarterly, is a reference book containing information on 3 million business locations nationwide, including business names, addresses, telephone numbers, number of years in the TRW data base, indication of public record information, and SIC codes. In addition, each listing has a days-beyond-terms score that summarizes a business' current trade payment performance.
 - TRW Developed Report Service provides commercial credit subscribers with verified trade references and more detailed trade information than they may have access to on a credit report.

TRW Target Marketing Services provides subscribers with marketing information formatted according to specific criteria for a variety of marketing uses. Using the TRW computerized consumer credit data base and its Executive Services data base of demographic information, TRW Target Marketing Services provides direct marketing consumer list services, prescreen services, statistical modeling products, and direct marketing software services.

Industry Markets

ISD customers are primarily in the retail, banking, and financial services industries.

Geographic Markets

All of ISD's revenue was derived from the U.S.

ISD serves subscribers and customers in all 50 states through 45 offices and more than 100 independent credit bureaus.

Offices are located in: Sacramento, San Diego, Los Angeles, and San Francisco (CA); Denver (CO); Bridgeport (CT); Wilmington (DE); Jacksonville and Miami (FL); Atlanta (GA); Chicago (IL); Indianapolis (IN); Louisville (KY); Baltimore (MD); Boston (MA); Grand Rapids and Detroit (MI); St. Louis (MO); Minneapolis (MN); Las Vegas and Reno (NV); Parsippany (NJ); Buffalo, New York, Rochester, and Syracuse (NY); Raleigh and Charlotte (NC); Cincinnati, Cleveland, Columbus, and Toledo (OH); Tulsa (OK); Portland (OR); Philadelphia (PA); Charleston and Columbia (SC); Dallas, Houston, Richardson, and San Antonio (TX); Salt Lake City (UT); Norfolk (VA); and Seattle (WA).

Computer Hardware and Software

ISD maintains computer centers in Anaheim (CA) and Richardson (TX). The Anaheim facility serves primarily consumer and commercial credit needs, while the Richardson facility supports direct marketing services.

COMPANY PROFILE

TRW INFORMATION SERVICES
505 City Parkway West
Orange, CA 92668
(714) 385-7000

Edward F. Freeman, Vice President and
General Manager
Division of TRW, Inc.
Total Employees: 1,600
Total Revenue, Fiscal Year End
12/31/86: \$125,000,000*

THE COMPANY

- TRW Information Services Division (ISD), formed in 1969, provides on-line inquiry/response services for consumer and business credit information. ISD is a division of the TRW Information Systems Group, which in turn is part of TRW, Inc.
- ISD is composed of three business segments as follows:
 - TRW Credit Data was formed in November 1969 when TRW acquired the Detroit-based Credit Data Corporation. Credit Data Corporation, founded in 1932, installed the first on-line consumer credit reporting system in 1965.
 - TRW Business Credit Services was formed after ISD completed a two-year study of the market for business credit reporting. The service went on-line in 1976.
 - TRW Direct Marketing Services was formed in 1986 in order to further leverage the information in the TRW consumer credit data base.
- INPUT estimates ISD 1985 revenue at \$110 million, a 10% increase over estimated 1984 revenue of \$100 million. INPUT projects that 1986 revenue will reach \$125 million. A five-year summary of estimated revenue follows:

TRW INFORMATION SERVICES
FIVE-YEAR ESTIMATED REVENUE SUMMARY
(\$ millions)

ITEM \ FISCAL YEAR	FISCAL YEAR				
	1986	1985	1984	1983	1982
Total Revenue	\$125	\$110	\$100	\$90	\$72
Percent increase from previous year	14%	10%	11%	25%	6%

*INPUT estimate

- Credit Data's major competitors are Trans Union Credit Information Company; The Credit Bureau, Inc., a subsidiary of Equifax; Associated Credit Services, Inc., a unit of Computer Sciences Corporation; and Chilton Corporation. Business Credit competes with Dun and Bradstreet Credit Services, a unit of Dun & Bradstreet Business Information Services.

KEY PRODUCTS AND SERVICES

- ISD derives 100% of its revenue from on-line inquiry/response services related to consumer and business credit information.
- TRW Credit Data is one of the largest vendors of on-line consumer credit information, with over 133 million consumers on file and 25,000 subscribers at 42,000 locations. Credit histories are accessed by banks, savings and loans, and oil companies, retailers, credit bureaus, finance companies, and other credit grantors.
 - Subscribers to the service have access to a vast consumer credit data base which is the basis for the TRW Updated Credit Profile. The Profile includes information about retail credit and bank charge card accounts, lines of credit, secured loans, and finance company accounts. Selected public record information limited to tax liens, judgments, and bankruptcies is also available. The consumer's payment history for the past 12 months is listed, and all requests for Profile information are recorded and retained for a period of one year.
 - Open credit accounts remain on the file indefinitely. Closed accounts and adverse credit information are retained on the Profile for a maximum of seven years. Bankruptcy information is removed after 10 years.
 - Credit information is collected from subscribing credit grantors on a monthly basis, usually via magnetic tape.
 - The cost of a Credit Profile is \$2 to \$5 when accessed via teleprinter.
 - Credit Data's Asset Control Techniques provide consumer credit managers with the following three account-monitoring methods. Credit Profiles are produced on selected accounts, using criteria defined by the subscriber.
 - Quest periodically reviews the subscriber's customer accounts, allowing payment trends to be determined.
 - Alert produces a management summary of accounts with unfavorable payment conditions as reported by other credit grantors. The subscriber may then order a Credit Profile, step up review cycles or collection efforts, or change credit limits.

- Signal reviews potential problem accounts as reported by other credit grantors.
- Business Credit's reporting services went on-line in July 1976 as the nation's first computerized commercial credit reporting service. It maintains objective trade payment and financial information on more than 11 million business locations. Nearly 8,000 companies contribute automated and manual accounts receivable information to the file every 30 to 90 days, which represents almost \$35 billion in accounts receivable.
- A typical TRW Business Profile Report costs from \$8 to \$12, with prices varying depending on the volume ordered and whether the customer is a contributor of information to the system. Profile Reports encompass the following information:
 - Current payment experience, including:
 - Payment practice by industry category.
 - Exact dates of each trade line and last sales activity.
 - Payment terms being extended.
 - Recent high credit amounts allowed by suppliers.
 - Account balance, with detailed aging and delinquent accounts.
 - The Trade Line Industry Profile provides a line-by-line analysis of a company's payment performance compared to that particular industry's average.
 - The Composite Industry Profile summarizes a company's overall payment performance as compared to suppliers within industry groups.
 - The Six-Month Payment Trend provides separate balance and aging summaries for the most recent six-month period.
 - The Quarterly Credit Pattern summarizes trade experience for the most recent and four preceding calendar quarters.
 - The Current Payment Guide provides a total account balance range, overall payment performance comparison, and a payment trend.
 - Information on the name and location of the company's bank is available.
 - Summary Business Data provides key information on over 360,000 U.S. businesses with 20 or more employees. Data includes product/service descriptions, revenue, number of employees, estimated market share, and ownership details.

- An Inquiries report lists inquiries made to the subject's credit file during the past 90 days.
- Business and Financial Data is based on information provided by Standard and Poor's Corporation. Included are three years of comparative balance sheet and operating statement items, 11 critical ratios on 6,000 publicly-held companies, in-depth analysis of 3,500 public companies, and summary information on over 50,000 public and private companies.
- Additional services include:
 - Asset Control Techniques, which are provided only to companies contributing accounts receivable information to Business Credit. Business Profile Reports are produced on selected companies, using contributor-defined criteria. The following account-monitoring methods are offered:
 - Update is used to review the contributor's customer base periodically to identify problem accounts.
 - Alert lists companies with unfavorable payment conditions as reported by other contributors.
 - Signal lists potential problem accounts and possible credit risks, as reported by other contributors.
 - Monitor continuously monitors accounts.
 - TRW's Business Payment Index is published quarterly, using information provided by contributing companies on the percentage of dollars owed by their domestic customers in current and past due categories. Indexes are available for more than 100 industry categories.
- Direct Marketing Services provides subscribers with marketing information formatted according to specific criteria for a variety of marketing uses.
 - Each of the services offered uses the TRW consumer credit data base and/or the TRW commercial credit data base.
 - The TRW Prescreen service uses subscriber-selected credit criteria to prequalify an existing list of potential customers. Prescreens are available using either TRW's consumer credit data base or the commercial credit data base. The TRW File Extract service is also available for prescreen programs.
 - The TRW Quest service assists credit grantors by periodically evaluating existing accounts based on the subscriber's criteria and providing a TRW Updated Credit Profile report whenever the evaluation criteria is met.

- The TRW SuperMarkets service generates a series of marketing information reports that profile a subscriber's market share as compared to its industry. The reports can cover topics such as market penetration, payment performance or account balances, and can focus on a particular state, metropolitan area, or ZIP code range.
- The TRW Address Verification service allows companies to verify a customer's billing address and the credit card account number before shipping merchandise.
- The TRW Address Update service can be used by many organizations to update a mailing list.

INDUSTRY MARKETS

- ISD customers are primarily in the retail, banking, and financial industries.

GEOGRAPHIC MARKETS

- All of ISD's revenue was derived from the U.S.
- ISD serves subscribers and customers in all 50 states through 33 offices and 68 independent credit bureaus.
 - Credit Data services customers through 22 offices and Business Credit services customers through 66 offices.
 - ISD offices are located in Orange (Los Angeles), Sacramento, San Diego, and Sausalito (San Francisco) (CA); Aurora (Denver) (CO); Bridgeport (CT); Jacksonville and Miami (FL); Atlanta (GA), Mt. Prospect (Chicago) (IL); Columbia (MD); Burlington (MA); Southfield (MI); Las Vegas and Reno (NV); Parsippany (NJ); Buffalo, Rochester, and Syracuse (NY); Cincinnati, Columbus, Middlebury Heights, and Toledo (OH); Tulsa (OK); King of Prussia (PA); Dallas and Houston (TX); Norfolk (VA); and Redmond (WA).

COMPUTER HARDWARE AND SOFTWARE

- ISD's computer center in Anaheim (CA) serves both Credit Data and Business Credit, and maintains the following equipment:
 - 1 IBM 3090, running under MVS.
 - 1 NAS AS/9080, running under MVS.
- Communications lines are provided by Tymshare and TRW's private network.



COMPANY HIGHLIGHT

TRW INFORMATION SERVICES

505 City Parkway West
Orange, CA 92668
(714) 937-2000

Edward J. Brennan, Jr.,
Vice President and
General Manager
Division of TRW, Inc.
Total Employees: 1,450
Total Revenue, Fiscal Year
End 12/31/81: \$68,000,000*

THE COMPANY

- TRW Information Services is a division of the TRW Electronics and Defense Sector, which in turn is part of TRW, Inc. The Information Services Division (ISD), formed in 1969, provides on-line inquiry/response services for consumer and business credit information.
- ISD is composed of two business segments.
 - TRW Credit Data was formed in November 1969, when TRW acquired the Detroit-based Credit Data Corporation. Credit Data Corporation, founded in 1932, installed the first on-line consumer credit reporting system in 1965.
 - TRW Business Credit Services was formed after ISD completed a two-year study of the market for business credit reporting. The service went on-line in 1976.
- ISD 1981 revenue is estimated by INPUT at \$68 million, a 10% increase over estimated 1980 revenue of \$62 million. A five-year summary of estimated revenue by business sector follows:

*INPUT estimate

TRW INFORMATION SERVICES

TRW INFORMATION SERVICES FIVE-YEAR ESTIMATED REVENUE SUMMARY (\$ millions)

ITEM \ FISCAL YEAR	1981	1980	1979	1978	1977
Credit Data revenue	\$ 52	\$ 50	\$ 56	\$ 53	\$ 43
• Percent increase from previous year	4%	(11%)	6%	23%	23%
Business Credit revenue	\$ 16	\$ 12	\$ 6	\$ 3	\$ 2
• Percent increase from previous year	33%	100%	100%	50%	100%
Total revenue	\$ 68	\$ 62	\$ 62	\$ 56	\$ 45
• Percent increase over previous year	10%	0%	11%	24%	25%

- Credit Data's revenue declined in 1980 due to the federal government's temporary imposition of credit controls during the second quarter. Sales recovered during the remainder of the year.
- Business Credit continued to reduce operating losses in 1981. Major investments include the building of the data base and automation of the manual credit reporting operations of over 32 associations affiliated with the National Association of Credit Management (NACM).
- On May 4, 1982, NACM's Service Corporation and TRW Information Services signed a new five-year contract covering ongoing development and marketing of computerized commercial credit reporting services.
- Credit Data's major competitors are Trans Union Credit Information Company; The Credit Bureau, Inc., a subsidiary of Equifax; Credit Bureau Data Centers, Inc., a unit of Computer Sciences Corporation; and Chilton Corporation. Business Credit competes with Dun and Bradstreet.
- TRW considers its major strength to be its extensive experience in building and distributing large data bases on-line.

KEY PRODUCTS AND SERVICES

- ISD derives 100% of its revenue from on-line inquiry/response services related to consumer and business credit information.
- TRW Credit Data is one of the largest vendors of on-line consumer credit information, with over 86 million consumers on file and 24,000 subscribers at 35,000 locations. Credit histories are accessed by banks, savings and loans, oil companies, retailers, credit bureaus, finance companies, and other credit grantors.

TRW INFORMATION SERVICES

- Subscribers to the service have access to a vast consumer credit data base which is the basis for the TRW Updated Credit Profile. The Profile includes information about retail credit and bank charge card accounts, lines of credit, secured loans, and finance company accounts. Selected public record information limited to tax liens, judgments, and bankruptcies is also available. The consumer's payment history for the past 12 months is listed, and all requests for Profile information are recorded and retained for a period of one year.
 - Open credit accounts remain on the file indefinitely. Closed accounts and adverse credit information are retained on the Profile for a maximum of seven years. Bankruptcy information is removed after 10 years.
 - Credit information is collected from subscribing credit grantors on a monthly basis, usually via magnetic tape.
 - The cost of a Credit Profile is \$1.50 when accessed via teleprinter.
- Credit Data's Asset Control Techniques provide consumer credit managers with the following three account-monitoring methods. Credit Profiles are produced on selected accounts, using criteria defined by the subscriber.
 - Quest periodically reviews the subscriber's customer accounts, allowing payment trends to be determined.
 - Alert produces a management summary of accounts with unfavorable payment conditions as reported by other credit grantors. The subscriber may then order a Credit Profile, step up review cycles or collection efforts, or change credit limits.
 - Signal reviews potential problem accounts as reported by other credit grantors.
- Business Credit's reporting services are operated in cooperation with the National Association of Credit Management (NACM). Services are marketed by NACM to its 44,000 members. TRW sells to members and non-members. NACM has affiliated credit associations in over 53 metropolitan areas which compile and exchange information for members and act as distributors for Business Credit reports. The Business Credit file contains over 20 million payment transaction records on approximately eight million business locations. Nearly 7,000 companies contribute automated and manual accounts receivable information to the file every 90 days.
- A typical TRW Business Profile Report costs about \$7.50, with prices varying depending on the volume ordered and whether the customer is a NACM member or a contributor of information to the system. Profile Reports encompass the following information.

- Current payment experience, including:
 - Payment practice by industry category.
 - Exact dates of each trade line and last sales activity.
 - Payment terms being extended.
 - Recent high credit amounts allowed by suppliers.
 - Account balance, with detailed aging and delinquent accounts.
- The Trade Line Industry Profile provides a line-by-line analysis of a company's payment performance compared to that particular industry's average.
- The Composite Industry Profile summarizes a company's overall payment performance as compared to suppliers within industry groups.
- The Six-Month Payment Trend provides separate balance and aging summaries for the most recent six-month period.
- The Quarterly Credit Pattern summarizes trade experience for the most recent and four preceding calendar quarters.
- The Current Payment Guide provides a total account balance range, overall payment performance comparison, and a payment trend.
- Information on the name and location of the company's bank is available.
- Summary Business Data provides key information on over 360,000 U.S. businesses with 20 or more employees. Data includes product/service descriptions, revenue, number of employees, estimated market share, and ownership details.
- An Inquiries report lists inquiries made to the subject's credit file during the past 90 days.
- Business and Financial Data is based on information provided by Standard and Poor's Corporation. Included are three years of comparative balance sheet and operating statement items, 11 critical ratios on 6,000 publicly-held companies, in-depth analysis of 3,500 public companies, and summary information on over 30,000 public and private companies.
- Additional services include:
 - Asset Control Techniques, which are provided only to companies contributing accounts receivable information to Business Credit. Business Profile Reports are produced on selected companies,

TRW INFORMATION SERVICES

using contributor-defined criteria. The following account-monitoring methods are offered.

- Update is used to review the contributor's customer base periodically to identify problem accounts.
- Alert lists companies with unfavorable payment conditions as reported by other contributors.
- Signal lists potential problem accounts and possible credit risks, as reported by other contributors.
- Monitor continuously monitors accounts.
- Regional directories are published twice a year, with alphabetic listings of the companies reported on by Business Credit.
- TRW's Business Payment Index is published quarterly, using information provided by contributing companies on the percentage of dollars owed by their domestic customers in current and past due categories. Indexes are available for 44 industry categories.

INDUSTRY MARKETS

- ISD customers are primarily in the retail, banking, and financial industries.

GEOGRAPHIC MARKETS

- One hundred percent of ISD revenue is domestic, derived primarily from the Northeast and West.
- ISD serves subscribers and consumers nationwide through 31 office locations and 61 independent credit bureaus serviced by TRW.
 - Credit Data offices are located in Bridgeport (CT); Buffalo, Rochester, and Syracuse (NY); Wakefield (MA); Wyoming and Southfield (MI); Columbia (MD); Miami; Norfolk (VA); Las Vegas and Reno; and Fresno, Sacramento, San Diego, and San Jose (CA).
 - Business Credit offices are located in Laurel (MD); Waltham (MA); Cincinnati and Cleveland; Dallas and Houston; Bloomington (MN); Blue Bell (PA); Federal Way (WA); and St. Louis.
 - Both Business Credit and Credit Data maintain offices in Atlanta, Mt. Prospect (IL), San Francisco and Orange (CA), and Parsippany (NJ).
- NACM offices that market Business Credit data are located in 39 cities.

COMPUTER HARDWARE AND SOFTWARE

- ISD's computer center in Anaheim (CA) serves both Credit Data and Business Credit, and maintains the following equipment:
 - 1 IBM 3033, running under MVS.
 - 1 Amdahl 470 V/8, running under MVS.
- Communications lines are provided by Tymshare and TRW's private network.

COMPANY HIGHLIGHT

TRW INFORMATION SERVICES

505 City Parkway West
Orange, CA 92668
(714) 937-2000

Edward J. Brennan, Vice President
General Manager
Division of TRW, Inc.
Total Employees: 1,500
Total Revenues, FYE 12/31/79:
\$62 Million*

THE COMPANY

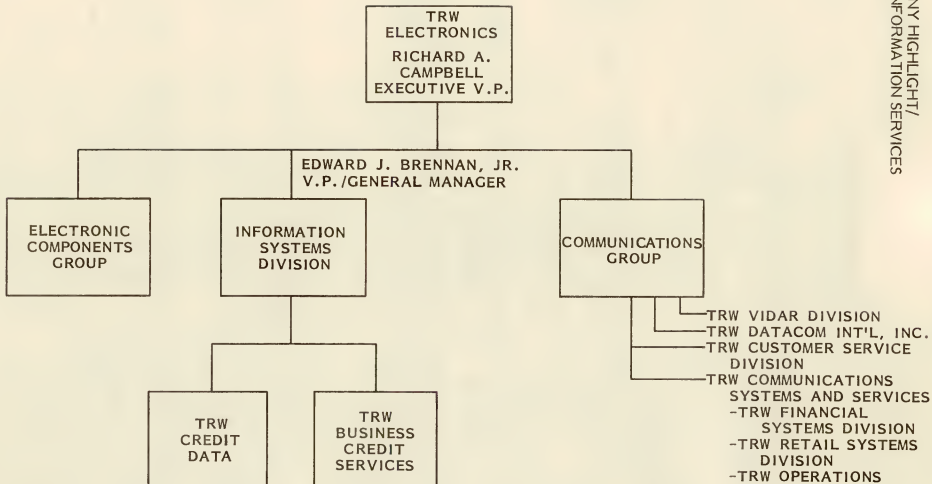
- TRW Information Services is a division of TRW Electronics Group, which in turn is part of TRW, Inc. An organization chart of TRW Electronics is shown in Exhibit I.
- TRW's Information Services Division (ISD) is composed of TRW Credit Data (a consumer credit service) and TRW Business Credit Services.
- For two years ISD also operated Validata, a service for verifying and guaranteeing checks and credit cards used at retail cash register positions. ISD sold this division to Tymshare in 1979.
- Revenues from Consumer Credit Data have increased since 1975 from \$29 million to an estimated \$56 million in 1979. Business Credit, which went into operation in 1976, had estimated revenues of \$6 million in 1979. ISD combined revenues in 1979 are therefore estimated at \$62 million, up from \$56 million in 1978.

TRW ISD
FIVE-YEAR
ESTIMATED REVENUES (\$ Millions)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
Credit Data	\$ 56	\$ 53	\$ 43	\$ 35	\$ 29
• Percent change	6%	23%	23%	21%	12%
Business Data	\$ 6	\$ 3	\$ 2	\$ 1	\$ 0
• Percent change	100%	50%	100%	--	--
Total	\$ 62	\$ 56	\$ 45	\$ 36	\$ 29
• Percent change	11%	24%	25%	24%	12%

*INPUT estimate

EXHIBIT I



COMPANY HIGHLIGHT/TRW INFORMATION SERVICES

- Business Credit operations have been running at a loss through 1979, but are expected to show a month-to-month profit in 1980, as the number of transactions on file exceeds the "critical mass" of 10 million.
- Credit Data's major competitors are Trans Union and Equifax. Business Credit competes with Dun and Bradstreet.
- TRW sees its major strengths in its long experience in building and distributing very large data bases on-line.

KEY PRODUCTS AND SERVICES

- All ISD revenues are derived from on-line inquiry/response services related to business and consumer credit information.
- TRW Credit Data entered the consumer credit business in 1969, and is considered the number one vendor in that field, with over 70 million consumers on file, and 24,000 subscribers at 31,000 locations. Credit histories are accessed by banks, savings and loans, oil companies, retailers, credit bureaus, financial companies and other credit grantors.
- National Credit Information Services (NACIS) is the name of the reporting service operated by TRW Business Credit for the National Association of Credit Management (NACM). NACIS is marketed by NACM to its 43,000 members. TRW sells to members and non-members.
- TRW entered the business credit reporting market in 1976, a market dominated by Dun and Bradstreet (D&B). Since its introduction, the NACIS file has grown to over 14 million payment transaction records on over six million companies. A report costs \$3.50.
 - TRW holds 5% of the market, while D & B holds 80%.
- NACIS reports include Standard and Poor's information on 30,000 corporations, as well as such specialized business credit information as:
 - Date of last payment transaction, and terms.
 - Recent high credit level.
 - Aged account balances.
 - Reported payment performance for prior six months.
 - All inquiries made within prior 60 days.

INDUSTRY MARKETS

- TRW does not keep records on industry sources of revenues. Primarily, as might be expected, customers are in retail and financial industries.

GEOGRAPHIC MARKETS

- Most revenues are derived from northeast and West Coast locations, with little from southern locations and the central U.S.

Northeast	35%
West	35
All other	30
	<hr/>
	100%

- TRW serves subscribers and consumers nationwide through 21 offices and 45 credit bureaus.
- NACIS offices that market Business Credit Data are located in the following cities:

Atlanta	Minneapolis
Boston	Parsippany (NJ)
Chicago	New York City
Cleveland	San Francisco
Dallas	Seattle
Los Angeles	St. Louis

- Business Credit Data is also sold directly by TRW through its own sales offices.
- Credit Data Consumer Relations Offices are located in the following cities:

Baltimore	Norfolk (VA)
Boston	Orange (CA)
Buffalo	Reno
Chicago	Rochester (NY)
Detroit	Sacramento
Fairfield (NJ)	San Diego
Fresno (CA)	San Jose
Grand Rapids (MI)	San Francisco
Las Vegas (NV)	Syracuse (NY)
Miami	

COMPUTER HARDWARE

- The computer center in Anaheim (CA) serves both consumer and business credit, and includes one IBM 3033 (8MB) and one Amdahl 470/V6 (6MB). Peripherals include:
 - One hundred sixty IBM 3350 disk drives, each storing 317.5 million characters.
 - Twenty-four IBM 3330 disk drives, each storing 200 million characters.
 - Sixteen CDC 33502 disk drives, each storing 635 million characters.
 - Twenty-six IBM 3420 tape drives.
 - One IBM 3852 mass storage system, capable of storing 100 billion characters.
 - A tape library of 22,000 tapes.
 - Six RJE stations to print reports for programmers and users of remote computing services.
 - One hundred seven TSO timesharing terminals.
- Customer equipment includes 9,000 teleprinters nationwide.
- Communications lines are provided both by Tymshare and TRW's private network:
 - Fifty-eight high-speed lines of over 90,000 air miles.
 - One thousand low-speed lines.
 - Hardware in 53 cities, serving 94 cities.

AUG 4 1980

Stephan H. Seidman

Consulting Services

663 Shake Ridge Rd., Rte. 2

Sutter Creek, Ca. 95685

(209) 296-7530-31

(415) 323-3975

August 1, 1980

Ms. Jo Jackson
INPUT
2471 E. Bayshore Road
Palo Alto, CA 94303

Dear Jo,

Enclosed is the Highlight on TRW, which completes (whew!) my work on CAMP.

An invoice is enclosed for three Highlights, IDC, NCR, and TRW. I'll bring the backup materials in next week, or the week after, unless you want them mailed sooner.

If you want to pass this by TRW (probably a fruitless plan), contacts are:

Kirk Stewart, Director of Public Affairs
Tom Goldman, VP New Business Development
Ed Barbieri, VP Business Credit Services

TRW Information Services Div.
505 City Parkway, West
Orange, CA 92668

Best regards,





COMPANY HIGHLIGHT

TRW ELECTRONICS
10880 Wilshire Blvd.
Los Angeles, CA 90024
(213) 475-6777

J. Sidney Webb, Executive Vice
President
Division of TRW, Inc.

THE COMPANY

- The parent company, TRW, Inc., was formed in 1958 by the merger of Thompson Products and Ramo-Wooldridge Corporation. Now a multinational company, TRW, Inc. supplies products and services in electronics, energy systems, and transportation. Net sales in FY 1976 reached \$2.929 billion, pretax earnings of \$242 million, and net earnings of \$133 million.
- TRW Electronics is the organization within TRW Inc. which handles most of the company's business. It:
 - manufactures, markets, and maintains terminal-based systems for retail and financial customers
 - provides computer-based credit authorization for electronic funds transfer applications.
- TRW electronics and computer-based services produced net sales of \$719 million in fiscal 1976, an increase of 13% over fiscal 1975 revenues of \$629 million. Pretax earnings during 1976 were \$19.0 million, down 32% from 1975 pretax earnings of \$27.9 million.
 - The decrease in 1976 resulted from losses associated with an Italian components operation and start-up costs associated with TRW's Business Credit and Point-of-Sale (POS) operations. The Italian operation has since been sold and the start-up costs absorbed.
 - TRW management expects fiscal 1977 sales in the electronics area to increase more than 10% and pretax earnings by substantially more than that.
- TRW Electronics has used acquisition as a means to enter new markets. Five of TRW's most significant recent acquisitions are:
 - Credit Data in 1968. Purchased from Credit Data Corporation, it is the largest automated consumer credit service in the U.S.
 - Financial Data Sciences, Inc. (FDS/i) in 1974. Renamed TRW's Financial Systems Division, it manufactures a full line of commercial bank and thrift association terminals.
 - May Department Stores Company Mark 2000 retail POS terminal manufacturing operation in 1974. TRW's second generation retail POS terminal -the TRW 2001 - is now being marketed.

COMPANY HIGHLIGHT/TRW ELECTRONICS

- Inventory, maintenance, and customer support for the Singer Business Machines (SBM) POS and System Ten equipment in 1976. The 40,000 Singer POS terminals currently installed at Sears, Roebuck will be maintained by TRW.
- TRW Customer Service Division recently acquired maintenance responsibilities for Pitney Bowes POS products.

KEY PRODUCTS AND SERVICES

- Computer Systems and Services (CS&S), headed by Richard A. Campbell, is the TRW Electronics group which offers communications products and services. It is composed of:
 - Retail Systems Division supplying retail and POS in-house system and terminal equipment.
 - Financial Systems Division, supplying financial terminals to savings and loan associations and commercial banks.
 - Credit Data, a computerized national consumer credit service.
 - Validata, an automated credit card and airline ticket verification service.
 - National Credit Information Service (NACIS), an automated commercial credit service.
 - CS&S also provides software development services for its systems users.
- The Retail Systems and Financial Systems Divisions offer in-house terminal systems for retail and financial clients. Representative installations include the following:
 - J. C. Penny Company has established a TRW designed nationwide credit authorization system which allows customers to use their Penney's card in any Penney's store across the country. The system uses eleven TRW minicomputers as regional authorization computers and one additional mini which acts as a switch to interconnect the regional computers. It is TRW's largest in-house, on-line credit authorization system in use today.
 - General Electric Credit Corporation (GECC) uses TRW System 4000 minicomputers to centralize credit management files for its retail subscribers. Its subscribers in turn use TRW credit authorization terminals for on-line access to the GECC-managed system.
 - The May Department Stores Company uses six TRW supplied credit authorization systems to provide divisional credit control across the country. In addition, TRW built and installed 4,000 Mark 2000 Point-of-Sale terminals under a special agreement with MayCo.
 - TRW's new generation POS terminals, the TRW 2001, were installed in 10 MayCo stores in 1977.
 - An equipment order from MayCo in January called for installation of 2500 terminals.

COMPANY HIGHLIGHT/TRW ELECTRONICS

- Surburbia Federal Savings and Loan, a major thrift institution in New York, operates over 80 TRW modular teller stations for its financial applications.
- Northeastern National Bank of Minneapolis operates over 100 TRW full function commercial bank teller terminals. The terminals have resulted in a significant production increase for the tellers.
- Wells Fargo Bank N.A., San Francisco, installed 1600 teller assist terminals in 1976 (linking its approximately 350 branches statewide) for check verification purposes. Other TRW terminals are installed at merchant locations for WellService, Wells' on-line check guarantee service.
- Credit Data files contain over 50 million consumer credit histories which are accessed by banks, savings and loans, oil companies, retailers, credit bureaus, financial companies, and other credit grantors. Inquiries are processed via telephone, teletype, and mail.
- Validata, begun in 1971 to track stolen airline tickets, has been expanded to provide verification for Master Charge, travel and entertainment (such as Carte Blanche), retail, and some VISA cards. Users include airlines, banks, hotels, car rental agencies, and merchants that access the data via Transaction Telephones, terminals, and computers.
- National Credit Information Service (NACIS) is the commercial counterpart to Credit Data. NACIS became operational in 1976.
- Software development. TRW has applied its experience with data communications oriented real time systems to the development of private networks for banks, department store chains, and food store chains. Software services are used to support the marketing of financial and POS terminals offered through other TRW divisions.
- TRW Datacom Division provides international marketing for CS&S products as well as Datapoint's product line. TRW Datacom has 32 distributors in 50 countries; a total of 150 locations.

APPLICATIONS TRW provides general business processing services.

INDUSTRY MARKETS Services users are primarily derived from the financial and retail industries. Federal government bodies and agencies have used TRW's software development skills.

GEOGRAPHIC MARKETS CS&S users are located throughout the U.S. and Canada, with concentrations in the Eastern and Western U.S.

COMPANY HIGHLIGHT/TRW ELECTRONICS

COMPUTER HARDWARE AND SOFTWARE

- TRW has two nationwide networks: one for Validata and one for Credit Data and NACIS.
- The Validata network consists of: two TRW-built System 4000 minicomputers (one for backup) in Hawthorne, California, approximately 1,000 TRW-owned terminals in 42 major cities, and AT&T Transaction Telephone terminals. One million Validata transactions per month are processed through the network with 2 to 3 second response times. The network is composed of dial-up and leased lines and direct computer-to-computer links with the central Validata computers.
- The Credit Data network (for Credit Data and NACIS services) consists of: two IBM 370/158s, an IBM 370/155 (for backup) in Anaheim, California, and 3000 on-line teletype and CRT terminals. Currently, the network processes 15,000 reports per hour (60% of capacity) with an average response time of 8 seconds.
- The Credit Data and Validata networks are not connected.

COMPANY PROFILE

TRW SYSTEM DEVELOPMENT

One Space Park
Redondo Beach, CA 90278
(213) 535-4321

Philip N. Papaccio, Vice President and
General Manager
Division of TRW, Inc.
Total Employees: 2,400
Total Revenue, Fiscal Year End
12/31/86: \$192 Million*
Noncaptive Revenue: \$165 Million*

THE COMPANY

- TRW System Development Division (SDD), formed in 1984, provides custom development and systems engineering professional services primarily to federal government agencies. SDD is a division of TRW Defense Systems Group, which in turn is part of TRW, Inc.
- INPUT estimates 1986 noncaptive information services revenue was \$165 million, a 5% increase over estimated 1985 noncaptive revenue of \$157 million.

KEY PRODUCTS AND SERVICES

- SDD derives all of its revenue from professional services custom software development and systems engineering services.
- Areas of expertise in custom software development and systems engineering include the following:
 - Text and numerical processing.
 - Digital communications, including packet switching as well as compressed and high-resolution digital video.
 - Multi-level network security and data encryption standards.
 - State of the art data bases including data base machines, extremely rapid retrieval inventions, and secure data base systems.
 - Innovative workstations.
- Examples of current and past projects include the following:
 - Secure information systems for the intelligence community and for the executive branch of the federal government. These systems support video transfer and video conferencing, electronic blackboard, multi-

*INPUT estimate

megabit data transfer, algorithmic data manipulation, data fusion, office automation, and knowledge-based man/machine interfaces.

- Systems that are aimed at the rapid manipulation of pattern data, such as fingerprints and topographical information.
- One of the largest local area networks (LANs) at the Cleveland Clinic.

INDUSTRY MARKETS

- SDD derived approximately 99% of noncaptive 1986 revenue from the federal government including the following sources: Air Force, Army, Navy, NASA, NATO, SDI (Strategic Defense Initiative), and confidential sources. The remaining 1% was derived from the commercial sector.

GEOGRAPHIC MARKETS

- Noncaptive 1986 revenue was derived primarily from the U.S. with a small percentage derived from NATO.
- SDD maintains branch offices in Sunnyvale (CA), Aurora (Denver) (CO), Las Cruces (NM), Houston (TX), Cocoa Beach (FL), and Huntsville (AL).

COMPUTER HARDWARE

- SDD maintains 25 data centers across the U.S. In addition to the mainframe and minicomputers listed below, SDD has a large number of microcomputers installed.
 - 1 IBM 4361.
 - 23 DEC VAX 11/7XXs, VMS or UNIX.
 - 7 Pyramids, OSx.
 - 4 SEL Gould 832s, MPX-32.
 - 1 AT&T 3B20A, UNIX.

TSI INTERNATIONAL

45 Danbury Road
Wilton, CT 06897
Phone: (203) 761-8600
Fax: (203) 762-9677

President & CEO: Constance F. Galley
Status: Private Corporation
Total Employees: 120
Total Revenue: \$15,000,000*
Fiscal Year End: 12/31/92

*INPUT estimate

Key Points

- TSI is one of the leading EDI software companies. It has strong technology, a conscientious management, and what appears to be solid financial resources.
- TSI's Trading Partner PC and mainframe products have received consistently high praise from users. The PC product was the first EDI software to run in a Windows environment, which has helped small EDI users to integrate EDI messaging with PC software packages (especially spreadsheets and data bases).
- TSI was the first company to deliver a mainframe implementation of server-based EDI processing through its Trading Partner Express product for MVS. Trading Partner Express allows EDI functions such as translation and mapping to be driven from client applications residing on non-MVS platforms such as Stratus, UNIX, and AS/400.
- TSI, leveraging its knowledge of hub company EDI requirements, has launched a mass marketing approach, selling EDI Kits, which are preformatted PC software customized for specific large hub companies. These Kits could be a very effective way to reach the six million small businesses in the U.S.
- TSI is expanding the potential of EDI within the emerging electronic commerce market through its latest offering--Mercator. Mercator is a graphical, any-to-any mapping capability that could become the "middleware" needed to map structured data among various electronic formats.

Company Description

TSI International develops and markets software products for IBM mainframes and PCs with a special focus on solutions for the delivery of data to production systems. TSI addresses the market needs of traditional (manual) data entry as well as EDI.

Company History

Founded in 1967, TSI successfully developed and marketed systems software products in the IBM mainframe software market, culminating in the 1978 introduction of KEY/MASTER, which grew over the following years to become the world's leading data input software system.

In June 1989, Warburg, Pincus Ventures, the venture group of E. M. Warburg, Pincus & Co., Inc., chose TSI as a vehicle for an undisclosed, but purportedly substantial capital investment in the EDI market. Warburg joined existing investors Dun & Bradstreet and Vanguard Atlantic.

The capital infusion made its most dramatic impact in 1990 when TSI launched its own mainframe translation software product, Trading Partner.

During 1990, TSI also acquired the license and customer base to TranSettlement's TranSlate EDI software for IBM mainframes and acquired the PC-translator company Foretell Corporation (from JWP, Inc.).

Strategy

TSI's strategy is to provide EDI software and application integration solutions to large Fortune 2000 accounts and to the trading partners of these accounts.

- TSI's mainframe product provides the infrastructure for both the rapid expansion of EDI within a "hub" organization and the integration of EDI with existing applications.
- TSI's PC Kits allow hub organizations to expand their EDI programs externally by providing a low-cost, easy-to-implement solution that has been preconfigured for their partners.
- TSI's software has also been instrumental in the development of hub-delivered applications for major trading communities such as Wal-Mart's Retail Link and the newly created OCEAN package for ocean shipping.

TSI works closely with its clients and has developed its product technology in response to emerging market requirements. This is particularly evident with respect to TSI's Trading Partner product, which was created in response to the needs of experienced EDI users.

Financials

TSI's 1992 revenue reached \$15 million, a 21% increase over 1991 revenue of \$12.4 million. TSI's EDI revenues grew 36% in the same period.

Alliances

TSI has over 50 VAR relationships, an extensive network of international distributors, and co-marketing agreements with a number of companies involved in various aspects of electronic commerce. This includes relationships with Monarch Marking (bar-coding), Sigma Imaging (imaging and workflow), and BC TEL (network services).

TSI's EDI products operate with all major VANs, including Advantis, AT&T, BC TEL, BT North America, GEIS, Ordernet, and others.

TSI is a HEDIC-approved supplier of EDI software for the health care industry and has national agreements with both DEDIC and the Blue Cross and Blue Shield Association.

Competitors

TSI's primary competitors include GE Information Services, IBM, Sterling Software, and Supply Tech.

Key Products and Services

Approximately 60% of TSI's revenues come from its EDI products and 40% from KEY/MASTER and other sources.

EDI Products:

Trading Partner[®] is TSI's high-performance, mainframe-based EDI management software package for MVS and VSE environments.

- Components include:
 - A translator for generating and validating EDI standard formats. The translator supports North American EDI implementations, the EDIFACT international standard, and user-tailored variations.

- An Applications Gateway™ for importing data to and exporting data from applications systems. The gateway contains the following features:
 - An on-line mapping facility that isolates production applications from changes in EDI formats
 - An exceptions management facility that provides a user-controlled environment for managing incoming data that passes standards validation but lacks information needed by the application (such as special pricing or sales commissions) or that fails other applications edits (such as validation of customer number)
 - Automatic data look-up facilities for substituting or appending data from tables or external files (e.g. converting incoming part numbers to standard part numbers)
 - Arithmetic capabilities, range checks, and other editing functions
 - EasyLogic, a tool for defining complex conditions and special edits from within Trading Partner without external programming
 - A data integration facility for incorporating bar-coded data, scanned data, and data in proprietary formats into the EDI data flow
 - An on-line window into incoming and outgoing data
 - A facility for keying of outbound transactions
- An administrative component for maintaining partner profiles and tailoring EDI exchanges to meet the special needs of each EDI partnership;
- An audit facility for tight monitoring and control of outgoing and incoming data.
- Trading Partner Real Time, introduced in 1992, provides support for real-time EDI through user control of processing schedules and priorities. Users can exert precise control of EDI activities by partner, transaction, application, and communications path.
- Trading Partner Express, also introduced in 1992, extends the capabilities of Trading Partner Real Time to provide concurrent EDI processing in separate MVS address spaces using a server-based

architecture. With Express, EDI functions such as translation and mapping can be invoked by user applications on non-MVS platforms, with a single user interface for EDI administration and control.

- Pricing for Trading Partner, Trading Partner Real Time, and Trading Partner Express is \$40,000 to \$200,000.

TranSlate[®] is an EDI translation software package that has been installed on a variety of platforms, including IBM mainframes (MVS and DOS/VSE), Unisys, Hewlett-Packard, Honeywell, Tandem, and DEC. TSI purchased the license to TranSlate and has upgraded the package but plans no major new releases. There are approximately 170 installations of TranSlate, including ones at major automotive, textile, manufacturing, banking, petroleum, grocery, retail, steel, and transportation companies.

Trading Partner[®] PC is EDI translation software designed for PCs. It runs in Microsoft's Windows environment and makes use of Windows' multitasking capabilities. It was the first EDI translation product designed for Windows and has over 4,000 installations. Trading Partner PC was developed by Foretell Corporation, which TSI acquired in 1990.

- Trading Partner PC supports ANSI X12, EDIFACT, and TRADACOMS EDI standard formats plus all industry implementations. It has communication interfaces for all major networks.
- Trading Partner PC is the first EDI product implemented in Windows 3.0. Trading Partner PC interfaces to flat files, but can also exchange data with Windows applications such as Excel spreadsheets using Windows' Dynamic Data Exchange (DDE).
- In conjunction with TSI's Kits program, Trading Partner PC has been reduced in price to \$495.

PC Kits: TSI sells preconfigured EDI packages known as Trading Partner Kits. Used in conjunction with Trading Partner PC, the Kits have all of the software and documentation required for trading with a specific hub.

- To date, TSI has produced a line of approximately 100 Kits to be used by spoke (supplier) companies to such hubs as Wal-Mart, Target, General Mills, Chrysler, and Allstate Insurance.
- TSI plans to offer another 100 buyer-specific Kits by the end of 1993.

- Kits are priced from \$249 to \$395 per Kit.
- TSI also sells a full complement of EDI standards as one form of Kit. Full EDI standard collections for ANSI, X12, and EDIFACT sell for \$295 each.
- TSI has contracted with the ISA, a consortium of the world's largest ocean shippers, to develop a custom version of the Kit called OCEAN. OCEAN will be used by ISA customers to conduct business electronically including booking shipments, processing invoices, and tracking shipment status.

Mercator™ is a general purpose data mapping product capable of transforming data arranged in any format into any other format (including but not limited to standardized file formats). In an EDI context, Mercator performs the important function of mapping EDI data to and from applications.

- Mercator runs under Windows, is based on object-level versus field mapping concepts, and has "any-to-any" mapping capabilities.
- The product features graphical, drag-and-drop operation and spreadsheet-like rules that eliminate the need for user programming.
- Mercator is written using client/server architecture. Maps and data structures are defined in client mode under Windows. The actual conversion of data (map execution) takes place in server mode. With the initial release of Mercator, map execution is under Windows. In subsequent releases, map execution will also occur in DOS, UNIX, and MVS environments.

Other Products:

KEY/MASTER^R provides facilities for data input to production applications and data bases from on-line 3270 terminals, off-line PCs and LANs, and nonkeyed sources such as bar codes, scanners, OCR, imaging, and ATMs.

- KEY/MASTER runs on IBM mainframes under all current versions of VSE, MVS, and VM/CMS.
- There are approximately 2,200 mainframe installations of KEY/MASTER throughout 28 countries in the world.

PC KEY/MASTER is a menu-driven data input system designed to suit the requirements of remote, casual users as well as decentralized, high-volume, data input users. Written in C, PC KEY/MASTER runs under PC-DOS on the IBM XT, AT, PS2, or any compatible PC and on any

PC-DOS-compatible networking software, such as Novell's Netware and IBM's Token Ring.

KEY/MASTER for Windows, introduced this past year, is a Windows-based forms design facility.

Industry Markets

TSI markets to large Fortune 2000 companies across all industry categories including manufacturing, distribution, transportation, health care, grocery, retail, telephone, and finance, and these companies' trading partners.

TSI's ability to handle the complex EDI transaction requirements in the health care and telephone industries gives it particular strength in these markets.

Clients

TSI has over 5,000 clients worldwide for its software products.

Geographic Markets

Approximately 80% of TSI's revenues are derived from U.S. sales and 20% from international sources.

TSI markets and supports its software worldwide through its U.S. headquarters, U.S.-based sales offices, a direct sales office servicing the U.K., and a network of regional offices, agents, and distributors in 26 countries.

COMPANY PROFILE

TSI INTERNATIONAL

45 Danbury Road
Wilton, CT 06897
(203) 761-8600
(800) 234-5566

Constance F. Galley, President and CEO
Private Corporation
Total Employees: 150
1990 Revenues: \$15-\$20 million*

*INPUT estimate

The Company

TSI International develops and markets software products for IBM mainframes and PCs with a special focus on solutions for the delivery of data to production systems. TSI addresses the market needs of traditional (manual) data entry as well as EDI. The company is an IBM Business Partner.

- Founded in 1967, TSI successfully developed and marketed systems software products in the IBM mainframe software market, culminating in the 1978 introduction of KEY/MASTER, which grew over the following years to become the world's leading data input software system.
- In June 1989, Warburg, Pincus Ventures, the venture group of E. M. Warburg, Pincus & Co., Inc., chose TSI as a vehicle for an undisclosed, but purportedly substantial capital investment in the EDI market.
- The capital infusion made its most dramatic impact in 1990 when TSI launched its own mainframe translation software product, Trading Partner. During 1990, TSI also acquired the license and customer base to TranSettlement's TranSlate EDI software for IBM mainframes and acquired the PC translator company Foretell Corporation (from JWP, Inc.).

Key Products and Services

Approximately 60% of TSI's revenues come from its KEY/MASTER offerings and 40% comes from its EDI products.

KEY/MASTER provides for data input to production applications and data bases from on-line 3270 terminals, off-line PCs and LANs, and non-keyed sources such as bar codes, scanners, OCR, imaging, and ATMs.

- KEY/MASTER runs on IBM mainframes (370, 30XX, 43XX, and 937X) under all current versions of VSE, MVS, and VM/CMS.

- There are approximately 2,200 mainframe installations of KEY/MASTER throughout 28 countries in the world.

PC KEY/MASTER is a menu-driven data input software system designed to suit the requirements of remote, casual users as well as decentralized, high-volume, data input users. Written in C, PC KEY/MASTER runs under PC-DOS on the IBM XT, AT, PS2, or any compatible PC and on any PC-DOS-compatible networking software, such as Novell's Netware and IBM's Token Ring.

Trading Partner is a high-performance, mainframe-based EDI management software package.

- Components include:
 - A translator for generating and validating EDI standard formats. The translator supports North American EDI implementations, the EDIFACT international standard, and user-tailored variations.
 - A communications gateway for network-independent data transmission between partners
 - An Applications Gateway™ for importing data to and exporting data from applications systems. The gateway contains the following features:
 - An on-line mapping facility that isolates production applications from changes in EDI formats
 - An exceptions-processing check that catches any incoming data that passes standards validation but lacks information needed by the application (such as special pricing or sales commissions) or that fails other applications edits (such as validation of customer number)
 - Automatic data look-up to substitute one company's part numbers for another's in tables or external files
 - Arithmetic capabilities, range checks, and other editing functions
 - EasyLogic, a tool for defining complex conditions and special edits from within Trading Partner without external programming
 - Integration of EDI data with bar-coded or scanned data

- An on-line window into incoming and outgoing data
- A facility for keying of outbound transactions
- An administrative component for maintaining partner profiles and tailoring EDI exchanges to meet the special needs of each EDI partnership;
- An audit facility for tight monitoring and control of outgoing and incoming data.
- Trading Partner is priced from \$30,000 to \$200,000.

TranSlate is an EDI translation software package that has been installed on a variety of platforms, including IBM mainframes (MVS and DOS/VSE), Unisys, Hewlett-Packard, Honeywell, Tandem, and DEC. TSI purchased the license to this package and has upgraded the package. TSI continues to support the user base. TSI has developed and distributed two new releases and plans a major release in mid-1991 to add on-line mapping capabilities to the product.

- There are approximately 170 installations of TranSlate, including ones at major automotive, textile, manufacturing, banking, petroleum, grocery, retail, steel, and transportation companies.
- TranSlate is priced in the range of \$25,000 to \$35,000.

ESP II is EDI translation software designed for PCs. It runs in Microsoft's Windows environment and makes use of the environment's multitasking capabilities. ESP II was developed by Foretell Corporation, which TSI acquired in 1990.

- ESP II supports ANSI X12, EDIFACT, and TRADACOMS EDI standard formats plus industry implementations such as VICS and UCS. It has communication interfaces for such networks as AGRIDATA, EDINET, GEIS, IBM IN, INS, ISTEEL, ORDERNET, REDINET, SEARS COMMUNICATION COMPANY, and others.
- ESP II is the first EDI product implemented in Windows 3.0. It uses Microsoft's Windows Dynamic Data Exchange (DDE) to map EDI data back and forth between applications. DDE enables all Windows applications to exchange data with each other with easy point-and-click techniques. A cell in an Excel spreadsheet, for example, can be linked to an EDI transaction set.

- ESP II ranges in price from \$2,600 to \$6,000. It has been installed in approximately 1,100 sites.

Industry Markets

With its mainframe products, TSI markets to large Fortune 1000 companies across all industry categories including manufacturing, distribution, transportation, health care, grocery, retail, and finance.

The Trading Partner package is relatively new and, as of late 1990, INPUT estimates only a few installations have been made. Early users represent a wide range of industries, including manufacturing, electronic, grocery, and health care.

TranSlate had its beginnings in the transportation industry but is used by large companies, particularly early adopters of EDI, in a large number of industries.

As of late 1990, the ESP II PC software was installed in approximately 1,100 sites throughout most industries but with a large concentration in retail, apparel, and manufacturers of consumer products.

The Irish postal authority, PostGEM, signed a large contract with Foretell to distribute ESP II software to the postal authority's suppliers.

The U.K. chemical/pharmaceutical firm ICI is using ESP II in its various divisions and trading partner sites.

Geographic Markets

Approximately 75% of TSI's revenues are derived from U.S. sales and 25% from non-U.S. sales. Approximately 60% of TSI's revenues come from its KEY/MASTER offering and 40% come from its EDI products.

TSI's mainframe EDI installations are primarily in the U.S. The PC software is more widely distributed among installations in the U.K., Europe, Hong Kong, Singapore, and Australia.

TSI markets and supports its software worldwide through its headquarters; U.S.-based sales offices; a direct sales office servicing the U.K.; and a network of regional offices, agents, and distributors in 26 countries.

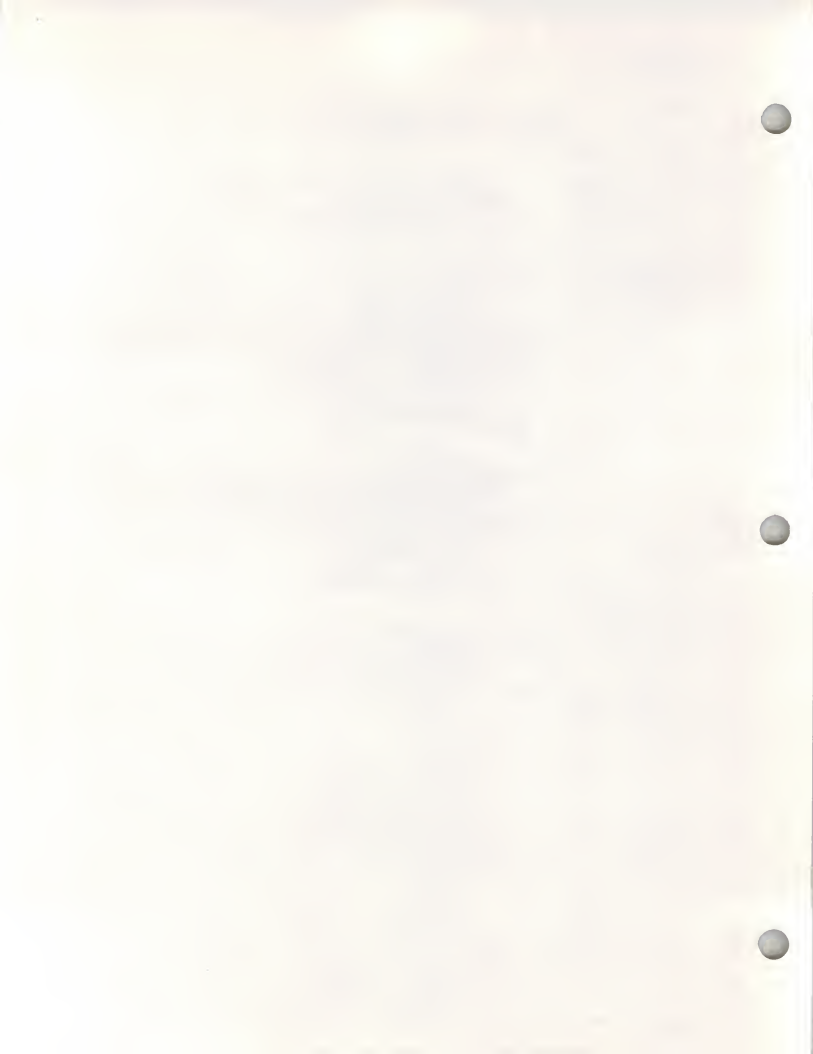
Strategies

TSI is pursuing EDI users with large volumes: hundreds of trading partners and many different types of transaction sets/messages per partner.

- The company focuses its marketing on whole trading communities: the company installs its mainframe software at large hub companies and the PC software at the many supplier and/or customer spoke companies. The Trading Partner and TranSlate mainframe products and the Foretell ESP II product are designed to handle large volumes. For example, the Trading Partner software allows users to easily maintain trading partner profiles (listing transaction sets, versions, product number look-up tables, etc.) and to easily map EDI files into application-ready files and back again. File maintenance and ease of use are mandatory when the number of trading partners starts climbing into triple digits. If translation software requires too much programming time to initiate and maintain each trading partner and each transaction set, large-volume EDI is not practical.

TSI has not publicly announced a strategy to offer EDI software to the 2,000 worldwide customers of its KEY/MASTER data entry software. This could be a viable strategy, however, as TSI's Trading Partner software uses the same application interface modules that KEY/MASTER does. Conceivably, a single platform running KEY/MASTER and Trading Partner could simultaneously support manual and EDI data entry into applications.

TSI has publicly promised to continue supporting the TranSlate software. Customers who desire the extended functionality of Trading Partner have been offered an attractive trade-in on their TranSlate software.



COMPANY PROFILE

TSR, INC.
400 Oser Avenue
Hauppauge, NY 11788
(516) 231-0333

Joseph F. Hughes, Chairman and CEO
James G. Raney, Jr., President and COO
Public Corporation, OTC
Total Employees: 201
Total Revenue, Fiscal Year End
5/31/87: \$24,373,385

THE COMPANY

- TSR, Inc., founded in 1969, provides professional services that include software conversion and development projects and contract programming; electronic publishing of construction industry specifications data bases; specialized batch processing for bank marketing applications, including micro-computer interfaces; facilities management services; text data base maintenance and demand printing; and remote computing (timesharing) services.
- Fiscal 1987 revenue reached \$24.4 million, a 25% increase over fiscal 1986 revenue of \$19.5 million. Net income was \$658,000, compared to \$647,000 in fiscal 1986. A five-year financial summary follows:

TSR, INC..
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	5/87	5/86	5/85	5/84	5/83
Revenue	\$ 24,373	\$ 19,506	\$ 18,279	\$ 16,558	\$ 13,433
. Percent increase from previous year	25%	7%	10%	23%	8%
Income before taxes	\$ 1,040	\$ 802	\$ 3,371	\$ 1,733	\$ 1,583
. Percent increase (decrease) from previous year	30%	(76%)	95%	9%	(9%)
Net income	\$ 658	\$ 647	\$ 2,020	\$ 1,028	\$ 930
. Percent increase (decrease) from previous year	2%	(68%)	96%	11%	(4%)
Earnings per share	\$ 0.28	\$ 0.26	\$ 0.83	\$ 0.45	\$ 0.41
. Percent increase (decrease) from previous year	8%	69%	84%	11%	(5%)

- TSR management attributes revenue increases for fiscal 1987 to the following:
 - A 25% increase in contract programming revenue, which now accounts for 51% of total revenue.
 - A \$1.4 million increase in bank marketing processing services revenue, of which nearly \$1 million was derived from new customers purchased in July 1986 from Alcon Data Services (a unit of Dun & Bradstreet, Inc.).
 - TSR acquired the financial institution customer list and certain bank marketing software from Alcon Data Services for approximately \$1.2 million.
 - The operations have been merged into TSR's CDP Marketing Information subsidiary.
- Fiscal 1987 operating results were impacted by charges for research and development relating to new microcomputer-based products for TSR's bank marketing services business and increased costs incurred in advertising, promotion, and travel and entertainment for the assimilation of the Alcon Data Services' customers into the company's bank marketing customer base.

- Pre-tax income increased 30% as a result of revenue growth and the lack of international banking software related expenses that were incurred during fiscal 1986.
 - During 1985 TSR entered into an exclusive license agreement with American Express Bank, Ltd. (AEBL) to market in the U.S. a software product for international bank operations. The product, originally designed for Honeywell computers, was converted to IBM equipment by TSR under a separate agreement with AEBL.
 - Because of lower than anticipated sales, TSR discontinued marketing efforts for the product during fiscal 1986.
- Revenue for the three months ending August 31, 1987, was \$6.3 million, compared to \$6.0 million for the same period in 1986. Net income for the period declined 10%, from \$186,000 to \$168,000.
- TSR has three subsidiaries as follows:
 - CDP Marketing Information Corporation, with 25 employees, provides batch processing of market research and analysis data to the banking and finance industry.
 - TSR Consulting Services, Inc., with 98 employees, provides contract programming services through its staff.
 - BIS, Inc., with 22 employees, provides text data base maintenance and computerized printing services to the federal government, large corporations, and the auditing and legal professions. Electronic publishing of construction industry specifications data bases are also performed in this unit.
- As of May 1987, TSR had 201 employees, segmented as follows:

Marketing/sales	20
Technical and programming consultants	102
Systems and operations	37
Administration and clerical	36
Executive officers	<u>6</u>
	201
- Major competitors include Control Data Corporation, Computer Sciences Corporation, GEISCO, and Boeing Computing Services.

KEY PRODUCTS AND SERVICES

- Approximately 56% (\$13.8 million) of TSR's fiscal 1987 revenue was derived from professional services (contract and specialized programming services). The remaining 44% (\$10.6 million) was derived from various processing services (remote computing/timesharing, banking marketing, data base maintenance, computerized printing, and facilities management).
- A three-year summary of source of revenue by service area follows:

TSR, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)

FISCAL YEAR ITEM	5/87		5/86		5/85	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Contract programming	\$12,577	51%	\$10,065	52%	\$7,593	42%
Specialized programming	1,187	5	261	1	2,043	11
Bank marketing	4,353	18	3,000	15	1,670	9
Text data base and demand printing	3,076	13	2,744	14	3,438	19
Facilities management	2,468	10	2,072	11	-	-
Timesharing	712	3	1,364	7	3,535	19
Total	\$24,373	100%	\$19,506	100%	\$18,279	100%

- Professional services provided by TSR include the following:
 - Through TSR Consulting Services, Inc., TSR provides contract programming services to various businesses, including financial institutions.
 - TSR also offers specialized programming and related consulting services.

- Currently the company is focused on providing conversion services to IBM environments.
- Contract programming and specialized services are billed on a time and materials basis. These services are primarily marketed in the New York metropolitan area.
- Processing services provided by TSR include the following:
 - Through CDP Marketing Information Corporation, TSR provides specialized batch processing of customer data for approximately 300 financial institutions from which reports and various magnetic media (desk, tape, diskettes) can be generated and used in the marketing of financial services.
 - The main product line, CrossMarkTM, is a customer information file-like data base that is used to produce a series of marketing management reports.
 - Direct mail services, color computerized mapping, and graphics services are also available.
 - CDP markets its services nationwide.
 - Through BIS, Inc., TSR provides text data base maintenance processing and computerized demand printing services as follows:
 - Document management and maintenance processing services include the following:
 - Text editing.
 - Text storage.
 - Document control.
 - Document and text retrieval.
 - Records management.
 - Document dissemination.
 - Document data bases.
 - Typesetting.
 - High-speed printing.
 - On-line software developed by BIS for document management is available for in-house use or via TSR's network and includes the following:
 - Word/One, a text creation/modification system for the preparation, formatting, editing, and maintenance of large documents.
 - KeySearch, a textual data base system.

- PhotoComp/Laser, a reprographics system for volume printing and production of camera-ready copy.
- BIS provides text automation services in support of various federal government operations including the following:
 - The creation and maintenance of the Federal Acquisition Regulations and the Defense Acquisition Regulations.
 - The creation and maintenance of the EPA's water regulations and related development documents, FAA's Airworthiness Directives, and publications for the Air Traffic Service division.
 - The maintenance of public data bases such as specifications for airport construction (FAA), general military construction facilities and works (Corps of Engineers), and on-shore U.S. Navy (NAVFAC) and Coast Guard (CG) construction projects.
 - BIS also markets SPECTEXT, a data base containing building code and design specifications that architectural firms access when they design construction projects. This data, which is supplied by the Construction Specifications Institute, is provided on a floppy disk for micro-computer users. BIS has expanded this activity to market construction specifications produced by the Department of Navy and the Army Corps of Engineers.
- On-line Litigation Support services consist of a file management system, using KeySearch for lengthy, complex cases.
- Conflict of Interest services use several data bases to help determine potential conflicts arising from business relationships between clients of law firms.
- Computerized demand printing services use TSR computers to manage and update employee benefit information and create typeset pages from the data base, and use Xerox 9700 laser printer to produce employee benefit plan booklets on demand.
- BIS markets its text data base maintenance services in the New York metropolitan area, Washington, D.C., and California.
- Since March 1985, TSR has been providing facilities management services to American Express Bank, Ltd. (AEBL).
 - Two IBM 3083 computers, leased directly by AEBL, are located at TSR's data center in Hauppauge.

- Timesharing services continue to represent a declining percent of TSR's business.
 - The company currently has 10 clients.
 - Applications available on TSR's network focus on decision-support services, data base management, and financial systems. All TSR applications have report-writing and graphic display capabilities and many have built-in sensitivity analysis and "what-if" modeling features.
 - TSR applications are used for financial management, corporate and strategic planning, marketing and sales, engineering and operations, and administration.
 - The services are marketed primarily in the New York metropolitan area and Texas.

INDUSTRY MARKETS

- TSR has established a client base that covers a broad spectrum of commercial, financial, and government organizations. This base includes Fortune 1000 companies and clients from the banking and finance, manufacturing, utilities, and insurance industries.
- During fiscal 1987, American Express Bank, Ltd. accounted for 12% (\$3 million) of revenue, Goldman Sachs accounted for 6% (\$1.4 million), and Merrill Lynch accounted for 6% (1.4 million).

GEOGRAPHIC MARKETS

- One hundred percent of TSR's 1987 revenue was derived from the U.S.
- Subsidiary locations are:
 - CDP Marketing Information Corporation, Hauppauge (NY).
 - TSR Consulting Services, Inc., New York City.
 - BIS, Inc., Hauppauge (NY).
- Additional offices are located in San Francisco and Century City (CA), New York (NY), Schaumburg (IL), Washington, D.C., and London.

TSR, INC.

COMPUTER HARDWARE AND SOFTWARE

- TSR has the following computers installed at its Hauppauge, Long Island (NY) data centers.
 - 7 IBM 4341s, VM/CMS, TOTAL/APL (owned by TSR).
 - 2 IBM 3083s, VM/CMS, TOTAL/APL (leased by AEBL).
- Clients access TSR's data center via TSRNET, a proprietary communications network, and Tymnet.

FINANCIAL UPDATE TO HIGHLIGHT DATED JANUARY 1984

TSR, INC.
400 Oser Avenue
Hauppauge, NY 11788
(516) 231-0333

Joseph F. Hughes, Chairman and
President
Public Corporation, OTC
Total Employees: 102
Total Revenue, Fiscal Year End
5/31/84: \$16,558,233

TSR, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	5/84	5/83	5/82	5/81	5/80
Revenue	\$ 16,558	\$ 13,433	\$ 12,422	\$ 8,211	\$ 5,100
• Percent increase (decrease) from previous year	23%	8%	51%	61%	(10%)
Income before taxes	\$ 1,733	\$ 1,583	\$ 1,731	\$ 1,023	\$ 679
• Percent increase (decrease) from previous year	9%	(9%)	69%	51%	(58%)
Net income	\$ 1,028	\$ 930	\$ 973	\$ 600	\$ 416
• Percent increase (decrease) from previous year	11%	(4%)	62%	44%	(51%)
Earnings per share	\$ 0.90	\$ 0.81	\$ 0.85	\$ 0.53	\$ 0.37
• Percent increase (decrease) from previous year	11%	(5%)	60%	43%	(51%)

SOURCE OF REVENUE

- Approximately 60% of TSR's fiscal 1984 revenue was derived from processing services (remote computing and batch). The remaining 40% of revenue was derived from professional services (32% contract programming and 8% computer consulting and training).

TSR, INC.

- A two-year summary of revenue by operating group/subsidiary is estimated as follows:

	5/84		5/83	
	<u>Revenue</u> <u>(\$ thousands)</u>	<u>Percent</u> <u>of Total</u>	<u>Revenue</u> <u>(\$ thousands)</u>	<u>Percent</u> <u>of Total</u>
Interactive Computing Services	\$ 6,990	42%	\$ 9,252	69%
TSR Consulting	5,354	32	3,284	24
CDP Marketing	897	6	897	7
Bowne Information Systems	<u>3,317</u>	<u>20</u>	<u>-</u>	<u>-</u>
	\$ 16,558	100%	\$ 13,433	100%

FINANCIAL UPDATE TO HIGHLIGHT DATED JANUARY 1984

TSR, INC.
400 Oser Avenue
Hauppauge, NY 11788
(516) 231-0333

Joseph F. Hughes, Chairman and
President
Public Corporation, OTC
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Interactive Computing				
Services	\$ 6,990	42%	\$ 9,252	69%
TSR Consulting	5,354	32	3,284	24
CDP Marketing	897	6	897	7
Bowne Information				
Systems	<u>3,317</u>	<u>20</u>	<u>-</u>	<u>-</u>
	\$ 16,558	100%	\$ 13,433	100%

COMPANY HIGHLIGHT

TSR, INC.
777 Northern Boulevard
Great Neck, NY 11021
(516) 487-0101

Joseph F. Hughes, Chairman and
President
Public Corporation, OTC
Total Employees: 102
Total Revenue, Fiscal Year End
5/31/83: \$13,433,011

THE COMPANY

- TSR, Inc. was founded in 1969 as Time Sharing Resources, Inc. The company provides remote computing, facilities management, timesharing, consulting and contract programming professional services, data base maintenance and processing, and computerized printing services.
 - Since timesharing is no longer the sole service offered, effective November 29, 1983, the company changed its name to TSR, Inc.
- Fiscal 1983 revenue was \$13.4 million, an 8% increase over \$12.4 million in fiscal 1982. Net income declined 4%, from \$973,000 in 1982 to \$930,000 in 1983. A five-year financial summary follows:

TSR, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	5/83	5/82	5/81	5/80	5/79
Revenue	\$ 13,433	\$ 12,422	\$ 8,211	\$ 5,100	\$ 5,657
• Percent increase (decrease) from previous year	8%	51%	61%	(10%)	22%
Income before taxes	\$ 1,583	\$ 1,731	\$ 1,023	\$ 679	\$ 1,608
• Percent increase (decrease) from previous year	(9%)	69%	51%	(58%)	23%
Net income	\$ 930	\$ 973	\$ 600	\$ 416	\$ 850
• Percent increase (decrease) from previous year	(4%)	62%	44%	(51%)	14%
Earnings per share	\$ 0.81	\$ 0.85	\$ 0.53	\$ 0.37	\$ 0.75
• Percent increase (decrease) from previous year	(5%)	60%	43%	(51%)	9%

- TSR management attributes income declines to increased labor costs related to a more professional services-based business as well as to lowered processing services revenue due to customers moving services in-house.
- Research and development costs, primarily for the development of software products, were \$877,000 (7% of revenue), \$795,000 (6% of revenue), and \$700,000 (9% of revenue) for fiscal 1983, 1982, and 1981, respectively.
- Effective August 1, 1983, TSR purchased certain proprietary software and laser printing equipment of Bowne Information Systems, Inc. of New York City from Bowne & Company.
 - TSR also acquired a two-year license to use the name Bowne Information Systems, Inc. (BIS) and formed a new 80%-owned subsidiary as a result of the acquisition. The minority interest is held by two former employees of BIS. BIS is now located in Great Neck (NY).
 - The purchase price consisted of a \$300,000 noninterest-bearing promissory note payable over six years, a warrant to purchase 30,000 shares of TSR's common stock at \$7.09 per share, and a deferred purchase price payable by the subsidiary equal to 15% of the subsidiary's pretax earnings during each of seven successive years commencing June 1, 1984.

TSR, INC.

- BIS provides text data base maintenance and demand printing services to the federal government, large corporations, and the auditing and legal professions. It operated as a wholly owned subsidiary of Bowne & Company, Inc. and had revenue of approximately \$7.8 million and a net loss of \$1.8 million for fiscal year end October 31, 1982. TSR estimates it will derive \$4 million in fiscal 1984 revenue from BIS.
- BIS had 40 employees at the time of acquisition.
- Revenue for the six months ending November 30, 1983, was \$7.6 million as compared with \$6.9 million for the same period in 1982. Net income for the period declined 13%, from \$524,000 in 1982 to \$458,000 in 1983.
- TSR has one operating group and three subsidiaries as follows:
 - The Integrated Computing Services Group, with 92 employees, provides remote computing, facilities management, microcomputer support processing, and professional services.
 - CDP Marketing Information Corporation, with 10 employees, provides batch processing of market research and analysis data to the banking industry.
 - T.S.R. Consulting Services, Inc., with eight employees, provides contract programming services through its staff and third-party, independent contractors.
 - Bowne Information Systems, Inc., with 30 employees, provides text data base maintenance and computerized printing services.
- As of May 31, 1983, TSR had 102 employees. The company currently has 140 employees, segmented as follows:

Marketing/sales	30
Customer support/software services	50
Computer operations	35
General and administrative	<u>25</u>
	140
- Major competitors include Control Data Corporation, D&B Computing Services, Computer Sciences Corporation, GEISCO, and Boeing Computer Services.

KEY PRODUCTS AND SERVICES

- Approximately 70% of TSR's fiscal 1983 revenue was derived from processing services (63% remote computing and facilities management and 7% batch). The remaining 30% of revenue was derived from professional services (24% contract programming and 6% computer consulting and training).

- A two-year summary of revenue by operating group and subsidiary follows:

	5/83		5/82	
	<u>Revenue</u> <u>(\$ thousands)</u>	<u>Percent</u> <u>of Total</u>	<u>Revenue</u> <u>(\$ thousands)</u>	<u>Percent</u> <u>of Total</u>
Integrated Computing Services	\$ 9,252	69%	\$ 9,493	76%
T.S.R. Consulting	3,284	24	2,228	18
CDP Marketing	<u>897</u>	<u>7</u>	<u>701</u>	<u>6</u>
Total	\$ 13,433	100%	\$ 12,422	100%

- Remote computing services are provided to over 400 clients via TSR's proprietary communications network, TSARNET, and Tymnet.
 - Applications available on TSR's network focus on decision-support services, data base management, and financial systems. All TSR applications have flexible report-writing and graphic display capabilities and many have built-in sensitivity analysis and "what-if" modeling features.
 - TSR applications are used for financial management, corporate and strategic planning, marketing and sales, engineering and operations, and administration.
 - TSR's Fixed Price Timesharing (FPT) service is configured to a client's requirements and offers a fixed monthly rate guaranteed over a flexible fixed time period.
 - The FPT user is provided a dedicated full-time computer, guaranteed backup, and full facilities management services, all provided from TSR's computer center.
 - There are currently four FPT clients.
 - In 1982 TSR introduced microcomputer support services.
 - The Micro Interface Program (MIP) software links the client's microcomputer to TSR's network. MIP can be customized by TSR for client use on an in-house mainframe.
 - The Micro Library Support System (MLSS) provides a central library to gather, disperse, and control information and programs.
 - INSIGHT/VisiCalc Interface (I/VI) augments VisiCalc, permitting simultaneous calculation of equations, value seeking, step sensitivity analysis, custom reporting, and consolidation.

- . There are currently 100 users of this service.
- As of June 1, 1983, TSR had 250 remote computing customers as compared to 300 customers June 1, 1982.
- A profile of applications available on the network is shown in the exhibit.
- TSR provides batch processing services to over 75 clients in the banking industry through CDP Marketing Information Corporation.
 - Bank client customer account files are first converted to TSR computers. Periodic updates are made.
 - The data is used to analyze client markets according to criteria established by the client.
 - CDP Marketing provides clients with a hard copy of the research and can prepare a targeted direct mail campaign with computer-generated mail labels and/or lists.
 - These services are generally marketed to banks with assets that exceed \$100 million.
- Through its newly formed subsidiary, Bowne Information Systems, TSR also provides text data base maintenance processing and computerized demand printing services as follows:
 - Document management and maintenance processing services include the following:
 - . Text editing.
 - . Text storage.
 - . Document control.
 - . Document and text retrieval.
 - . Records management.
 - . Document dissemination.
 - . Document data bases.
 - . Typesetting.
 - . High-speed printing.
 - On-line software developed by Bowne Information Systems for document management is available for in-house use or via TSR's network and includes the following:
 - . Word/One, a text creation/modification system for the preparation, formatting, editing, and maintenance of large documents.
 - . KeySearch, a textual data base system.

EXHIBIT

TSR NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none">● OPERATING ENVIRONMENT<ul style="list-style-type: none">— 1 IBM 3031 AP, VM/CMS— 3 IBM 370/158s, VM/CMS● PROGRAMMING LANGUAGES SUPPORTED<ul style="list-style-type: none">— APL— BASIC— FORTRAN— COBOL— APL/1— TOTAL/APL— BAL— PASCAL● DATA MANAGEMENT SOFTWARE<ul style="list-style-type: none">— SHELL— RAMIS II● DATA BASES AVAILABLE<ul style="list-style-type: none">— CONSUMER AND PRODUCER<ul style="list-style-type: none">● PPI/CP1— ECONOMIC<ul style="list-style-type: none">● CITIBASE— SECURITIES AND INVESTMENTS<ul style="list-style-type: none">● MULLER DATA— BANKING<ul style="list-style-type: none">● DECISION RESEARCH SCIENCES● FHLBB— INSURANCE<ul style="list-style-type: none">● A.M. BEST	<ul style="list-style-type: none">● GRAPHICS<ul style="list-style-type: none">— XIBIT— TSR GRAPH— SAS/GRAPH● STATISTICAL/MATH<ul style="list-style-type: none">— SAS— MATHPAC● FINANCIAL<ul style="list-style-type: none">— INSIGHT (FINANCIAL ANALYSIS)— QED (FORECASTING AND MODELING)— COMPASS● MICROCOMPUTER SUPPORT SERVICES<ul style="list-style-type: none">— MICRO INTERFACE PROGRAM (MIP)— MICRO LIBRARY SUPPORT SYSTEM (MLSS)— INSIGHT/VISICALC INTERFACE (I/VI)● DOCUMENT MANAGEMENT<ul style="list-style-type: none">— WORD/ONE— KEYSEARCH— PHOTOCOMP/LASER— DOCUMENT DATA BASES● OTHER<ul style="list-style-type: none">— ELECTRONIC MAIL— PROJECT PLANNING AND CONTROL— FLEET COST CONTROL— SCRIPT— LITIGATION SUPPORT— CONFLICT OF INTEREST— COMPUTERIZED DEMAND PRINTING

- PhotoComp/Laser, a reprographics system for volume printing and production of camera-ready copy.
- Bowne Information Systems provides text automation services in support of various federal government operations including the following:
 - The creation and maintenance of the Federal Acquisition Regulations and the Defense Acquisition Regulations.
 - The creation and maintenance of the EPA's water regulations and related development documents, FAA's Airworthiness Directives, and publications for the Air Traffic Service division.
 - The maintenance of public data bases such as specifications for airport construction (FAA), general military construction facilities and works (Corps of Engineers), and on-shore U.S. Navy (NAVFAC) and Coast Guard (CG) construction projects.
- On-line Litigation Support services are provided to over 10 clients and consist of a file management system, using KeySearch for lengthy, complex cases.
- Conflict of Interest services use several data bases to help determine potential conflicts arising from business relationships between clients of law firms.
- Computerized demand printing services use TSR computers to manage and update employee benefit information and create typeset pages from the data base, and use a Xerox 9700 laser printer to produce employee benefit plan booklets on demand.
- TSR estimates Bowne Information Services will contribute \$4 million to fiscal 1984 revenue.
- Professional services are provided by TSR as follows:
 - Through the Integrated Computing Services Group, client services include:
 - Custom microcomputer/mainframe software.
 - Consulting for microcomputer and interactive applications.
 - Feasibility studies and systems specifications development.
 - Applications programming.
 - Personal Computer Tutorial Centers, located in most TSR offices, which provide hands-on courses in a variety of languages

and applications. TSR also provides customized on-site training for microcomputer use.

- The company has consulting expertise with a variety of mainframes, minicomputers, and microcomputers.
- Through T.S.R. Consulting Services the company markets the services of its staff and independent consultants for contract programming assignments.

INDUSTRY MARKETS

- TSR has established a client base that covers a broad spectrum of commercial, financial, and government organizations. This base includes Fortune 1000 companies, oil and gas exploration companies, and clients from the banking and finance, manufacturing, utilities, and insurance industries.
- During fiscal 1983 Pepsi Cola Bottling Company accounted for \$718,000 (5%) of revenue, and American Express accounted for \$822,000 (6%) of revenue.

GEOGRAPHIC MARKETS

- One hundred percent of TSR's fiscal 1983 revenue was derived from the U.S.
- Subsidiary locations are:
 - CDP Marketing Information Corporation, Hauppauge (NY).
 - T.S.R. Consulting Services, Inc., New York City.
 - Bowne Information Systems, Inc., Great Neck (NY).
- Additional offices are located in Chicago, Dallas, Houston, Los Angeles, Miami, Orlando, Paramus (NJ), Philadelphia, San Francisco, Springfield (VA), Stamford (CT), and Washington, D.C.

COMPUTER HARDWARE AND SOFTWARE

- TSR has the following computers installed at its Hauppauge, Long Island (NY) data center:
 - 1 IBM 3031 AP, VM/CMS, TOTAL/APL.
 - 3 IBM 370/158s, VM/CMS, TOTAL/APL.
- Clients access TSR's data center via TSRNET, a proprietary communications network, and Tymnet.

COMPANY HIGHLIGHT

TSR, INC.
777 Northern Boulevard
Great Neck, NY 11021
(516) 487-0101

Joseph F. Hughes, Chairman and
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Total Revenue, Fiscal Year End
5/31/83: \$13,433,011

THE COMPANY

- TSR, Inc. was founded in 1969 as Time Sharing Resources, Inc. The company provides remote computing, facilities management, timesharing, consulting and contract programming professional services, data base maintenance and processing, and computerized printing services.
 - Since timesharing is no longer the sole service offered, effective November 29, 1983, the company changed its name to TSR, Inc.
- Fiscal 1983 revenue was \$13.4 million, an 8% increase over \$12.4 million in fiscal 1982. Net income declined 4%, from \$973,000 in 1982 to \$930,000 in 1983. A five-year financial summary follows:

TSR, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	5/83	5/82	5/81	5/80	5/79
Revenue	\$ 13,433	\$ 12,422	\$ 8,211	\$ 5,100	\$ 5,657
• Percent increase (decrease) from previous year	8%	51%	61%	(10%)	22%
Income before taxes	\$ 1,583	\$ 1,731	\$ 1,023	\$ 679	\$ 1,608
• Percent increase (decrease) from previous year	(9%)	69%	51%	(58%)	23%
Net income	\$ 930	\$ 973	\$ 600	\$ 416	\$ 850
• Percent increase (decrease) from previous year	(4%)	62%	44%	(51%)	14%
Earnings per share	\$ 0.81	\$ 0.85	\$ 0.53	\$ 0.37	\$ 0.75
• Percent increase (decrease) from previous year	(5%)	60%	43%	(51%)	9%

- TSR management attributes income declines to increased labor costs related to a more professional services-based business as well as to lowered processing services revenue due to customers moving services in-house.
- Research and development costs, primarily for the development of software products, were \$877,000 (7% of revenue), \$795,000 (6% of revenue), and \$700,000 (9% of revenue) for fiscal 1983, 1982, and 1981, respectively.
- Effective August 1, 1983, TSR purchased certain proprietary software and laser printing equipment of Bowne Information Systems, Inc. of New York City from Bowne & Company.
 - TSR also acquired a two-year license to use the name Bowne Information Systems, Inc. (BIS) and formed a new 80%-owned subsidiary as a result of the acquisition. The minority interest is held by two former employees of BIS. BIS is now located in Great Neck (NY).
 - The purchase price consisted of a \$300,000 noninterest-bearing promissory note payable over six years, a warrant to purchase 30,000 shares of TSR's common stock at \$7.09 per share, and a deferred purchase price payable by the subsidiary equal to 15% of the subsidiary's pretax earnings during each of seven successive years commencing June 1, 1984.

TSR, INC.

- BIS provides text data base maintenance and demand printing services to the federal government, large corporations, and the auditing and legal professions. It operated as a wholly owned subsidiary of Bowne & Company, Inc. and had revenue of approximately \$7.8 million and a net loss of \$1.8 million for fiscal year end October 31, 1982. TSR estimates it will derive \$4 million in fiscal 1984 revenue from BIS.
- BIS had 40 employees at the time of acquisition.
- Revenue for the six months ending November 30, 1983, was \$7.6 million as compared with \$6.9 million for the same period in 1982. Net income for the period declined 13%, from \$524,000 in 1982 to \$458,000 in 1983.
- TSR has one operating group and three subsidiaries as follows:
 - The Integrated Computing Services Group, with 92 employees, provides remote computing, facilities management, microcomputer support processing, and professional services.
 - CDP Marketing Information Corporation, with 10 employees, provides batch processing of market research and analysis data to the banking industry.
 - T.S.R. Consulting Services, Inc., with eight employees, provides contract programming services through its staff and third-party, independent contractors.
 - Bowne Information Systems, Inc., with 30 employees, provides text data base maintenance and computerized printing services.
- As of May 31, 1983, TSR had 102 employees. The company currently has 140 employees, segmented as follows:

Marketing/sales	30
Customer support/software services	50
Computer operations	35
General and administrative	<u>25</u>
	140
- Major competitors include Control Data Corporation, D&B Computing Services, Computer Sciences Corporation, GEISCO, and Boeing Computer Services.

KEY PRODUCTS AND SERVICES

- Approximately 70% of TSR's fiscal 1983 revenue was derived from processing services (63% remote computing and facilities management and 7% batch). The remaining 30% of revenue was derived from professional services (24% contract programming and 6% computer consulting and training).

- A two-year summary of revenue by operating group and subsidiary follows:

	5/83		5/82	
	<u>Revenue</u> <u>(\$ thousands)</u>	<u>Percent</u> <u>of Total</u>	<u>Revenue</u> <u>(\$ thousands)</u>	<u>Percent</u> <u>of Total</u>
Integrated Computing Services	\$ 9,252	69%	\$ 9,493	76%
T.S.R. Consulting	3,284	24	2,228	18
CDP Marketing	<u>897</u>	<u>7</u>	<u>701</u>	<u>6</u>
Total	\$ 13,433	100%	\$ 12,422	100%

- Remote computing services are provided to over 400 clients via TSR's proprietary communications network, TSRNET, and Tymnet.
 - Applications available on TSR's network focus on decision-support services, data base management, and financial systems. All TSR applications have flexible report-writing and graphic display capabilities and many have built-in sensitivity analysis and "what-if" modeling features.
 - TSR applications are used for financial management, corporate and strategic planning, marketing and sales, engineering and operations, and administration.
 - TSR's Fixed Price Timesharing (FPT) service is configured to a client's requirements and offers a fixed monthly rate guaranteed over a flexible fixed time period.
 - The FPT user is provided a dedicated full-time computer, guaranteed backup, and full facilities management services, all provided from TSR's computer center.
 - There are currently four FPT clients.
 - In 1982 TSR introduced microcomputer support services.
 - The Micro Interface Program (MIP) software links the client's microcomputer to TSR's network. MIP can be customized by TSR for client use on an in-house mainframe.
 - The Micro Library Support System (MLSS) provides a central library to gather, disperse, and control information and programs.
 - INSIGHT/VisiCalc Interface (I/VI) augments VisiCalc, permitting simultaneous calculation of equations, value seeking, step sensitivity analysis, custom reporting, and consolidation.

- . There are currently 100 users of this service.
- As of June 1, 1983, TSR had 250 remote computing customers as compared to 300 customers June 1, 1982.
- A profile of applications available on the network is shown in the exhibit.
- TSR provides batch processing services to over 75 clients in the banking industry through CDP Marketing Information Corporation.
 - Bank client customer account files are first converted to TSR computers. Periodic updates are made.
 - The data is used to analyze client markets according to criteria established by the client.
 - CDP Marketing provides clients with a hard copy of the research and can prepare a targeted direct mail campaign with computer-generated mail labels and/or lists.
 - These services are generally marketed to banks with assets that exceed \$100 million.
- Through its newly formed subsidiary, Bowne Information Systems, TSR also provides text data base maintenance processing and computerized demand printing services as follows:
 - Document management and maintenance processing services include the following:
 - . Text editing.
 - . Text storage.
 - . Document control.
 - . Document and text retrieval.
 - . Records management.
 - . Document dissemination.
 - . Document data bases.
 - . Typesetting.
 - . High-speed printing.
 - On-line software developed by Bowne Information Systems for document management is available for in-house use or via TSR's network and includes the following:
 - . Word/One, a text creation/modification system for the preparation, formatting, editing, and maintenance of large documents.
 - . KeySearch, a textual data base system.

EXHIBIT

TSR NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none">● OPERATING ENVIRONMENT<ul style="list-style-type: none">— 1 IBM 3031 AP, VM/CMS— 3 IBM 370/158s, VM/CMS● PROGRAMMING LANGUAGES SUPPORTED<ul style="list-style-type: none">— APL— BASIC— FORTRAN— COBOL— APL/1— TOTAL/APL— BAL— PASCAL● DATA MANAGEMENT SOFTWARE<ul style="list-style-type: none">— SHELL— RAMIS II● DATA BASES AVAILABLE<ul style="list-style-type: none">— CONSUMER AND PRODUCER<ul style="list-style-type: none">● PPI/CPI— ECONOMIC<ul style="list-style-type: none">● CITIBASE— SECURITIES AND INVESTMENTS<ul style="list-style-type: none">● MULLER DATA— BANKING<ul style="list-style-type: none">● DECISION RESEARCH SCIENCES● FHLBB— INSURANCE<ul style="list-style-type: none">● A.M. BEST	<ul style="list-style-type: none">● GRAPHICS<ul style="list-style-type: none">— XIBIT— TSR GRAPH— SAS/GRAPH● STATISTICAL/MATH<ul style="list-style-type: none">— SAS— MATHPAC● FINANCIAL<ul style="list-style-type: none">— INSIGHT (FINANCIAL ANALYSIS)— OED (FORECASTING AND MODELING)— COMPASS● MICROCOMPUTER SUPPORT SERVICES<ul style="list-style-type: none">— MICRO INTERFACE PROGRAM (MIP)— MICRO LIBRARY SUPPORT SYSTEM (MLSS)— INSIGHT/VISICALC INTERFACE (I/VI)● DOCUMENT MANAGEMENT<ul style="list-style-type: none">— WORD/ONE— KEYSEARCH— PHOTOCOMP/LASER— DOCUMENT DATA BASES● OTHER<ul style="list-style-type: none">— ELECTRONIC MAIL— PROJECT PLANNING AND CONTROL— FLEET COST CONTROL— SCRIPT— LITIGATION SUPPORT— CONFLICT OF INTEREST— COMPUTERIZED DEMAND PRINTING

- PhotoComp/Laser, a reprographics system for volume printing and production of camera-ready copy.
- Bowne Information Systems provides text automation services in support of various federal government operations including the following:
 - The creation and maintenance of the Federal Acquisition Regulations and the Defense Acquisition Regulations.
 - The creation and maintenance of the EPA's water regulations and related development documents, FAA's Airworthiness Directives, and publications for the Air Traffic Service division.
 - The maintenance of public data bases such as specifications for airport construction (FAA), general military construction facilities and works (Corps of Engineers), and on-shore U.S. Navy (NAVFAC) and Coast Guard (CG) construction projects.
- On-line Litigation Support services are provided to over 10 clients and consist of a file management system, using KeySearch for lengthy, complex cases.
- Conflict of Interest services use several data bases to help determine potential conflicts arising from business relationships between clients of law firms.
- Computerized demand printing services use TSR computers to manage and update employee benefit information and create typeset pages from the data base, and use a Xerox 9700 laser printer to produce employee benefit plan booklets on demand.
- TSR estimates Bowne Information Services will contribute \$4 million to fiscal 1984 revenue.
- Professional services are provided by TSR as follows:
 - Through the Integrated Computing Services Group, client services include:
 - Custom microcomputer/mainframe software.
 - Consulting for microcomputer and interactive applications.
 - Feasibility studies and systems specifications development.
 - Applications programming.
 - Personal Computer Tutorial Centers, located in most TSR offices, which provide hands-on courses in a variety of languages

and applications. TSR also provides customized on-site training for microcomputer use.

- The company has consulting expertise with a variety of mainframes, minicomputers, and microcomputers.
- Through T.S.R. Consulting Services the company markets the services of its staff and independent consultants for contract programming assignments.

INDUSTRY MARKETS

- TSR has established a client base that covers a broad spectrum of commercial, financial, and government organizations. This base includes Fortune 1000 companies, oil and gas exploration companies, and clients from the banking and finance, manufacturing, utilities, and insurance industries.
- During fiscal 1983 Pepsi Cola Bottling Company accounted for \$718,000 (5%) of revenue, and American Express accounted for \$822,000 (6%) of revenue.

GEOGRAPHIC MARKETS

- One hundred percent of TSR's fiscal 1983 revenue was derived from the U.S.
- Subsidiary locations are:
 - CDP Marketing Information Corporation, Hauppauge (NY).
 - T.S.R. Consulting Services, Inc., New York City.
 - Bowne Information Systems, Inc., Great Neck (NY).
- Additional offices are located in Chicago, Dallas, Houston, Los Angeles, Miami, Orlando, Paramus (NJ), Philadelphia, San Francisco, Springfield (VA), Stamford (CT), and Washington, D.C.

COMPUTER HARDWARE AND SOFTWARE

- TSR has the following computers installed at its Hauppauge, Long Island (NY) data center:
 - 1 IBM 3031 AP, VM/CMS, TOTAL/APL.
 - 3 IBM 370/158s, VM/CMS, TOTAL/APL.
- Clients access TSR's data center via TSRNET, a proprietary communications network, and Tymnet.

(Stan Mantell)

Sam Wiegand
VP Marketing

COMPANY HIGHLIGHT

TANDEM COMPUTERS, INC.
20605 Valley Green Drive
Cupertino, California 95014
(408) 255-4800

James G. Treybig, President
Privately owned company
Number of employees: 100
Revenues, fiscal year end 9/76:
\$8 million*

COMPANY BACKGROUND: Incorporated in November 1976, Tandem Computers, Inc. has developed and is marketing Tandem 16 NonStop, the first continuous operation multiple processor system.

OVERALL ASSESSMENT:

- Revenues should double in 1978 to \$16 million.
- The Tandem 16 will impact the "back up computer" market, in that Tandem currently offers the unique security of continuous transaction and non-deterioration of data bases.
- Future products will provide additional elements of distributed processing with the opportunity of eliminating the presently required on-site maintenance capability.
- Tandem is one of the truly exciting new companies in the computer industry. The dual processor concept provides operational security in a distributed processing environment, offering a unique alternative to the omnipresent IBM field maintenance force.

KEY PRODUCTS AND SERVICES:

- Tandem Computers, Inc. designed, produced and shipped "Tandem 16 NonStop," the first multiple processor system to operate continuously in an on-line real time environment, in May of 1976.
 - Operation continues regardless of where a failure in the system may occur, hardware or software.
 - The system identifies failure modes and allows for on-line maintenance or repair without interfering with the operation.

*Estimate by INPUT

COMPANY HIGHLIGHT/TANDEM COMPUTERS, INC.

- The average system price of \$150,000 includes processors (up to 512,000 bytes of memory), disk drives (10-300 MB), tape drives, line printers (200-1,200 lpm), and visual display work stations.
- The company provides the Guardian^(TM) Operating System, File Management System, Text Editor and a transaction application package (T/TAL) compiler.
- Every controller module has dual ports and is connected to the I/O channels of two processor modules. Each processor module is connected to every other processor in the system by a dual bus structure. (Dynabus). The total system can accommodate up to 16 processor modules, each handling up to 128 19,200 baud communications' lines.

APPLICATIONS:

- Tandem does not offer applications programming or turnkey installations. These are provided by independent system houses or by the end user's in-house staff. The company maintains its product itself; however, because of the unique architectural concept, response time need never be immediate. The product is transferred on a sale basis only; no leases are offered.
- All installations and orders to date have been with organizations requiring the utmost security and accuracy of transactions and maximization of data base integrity, while maintaining continuous operation.

INDUSTRY MARKETS: The majority of business is being done with banks and financial institutions (funds transfer, message switching and credit cards); large distributors (warehouse control); Federal Government agencies.

GEOGRAPHIC MARKETS: Sales offices are located in San Francisco and Los Angeles, California; Dallas, Texas; Chicago, Illinois; Washington, D.C.; New York, New York; and Frankfurt, Germany.

COMPANY BRIEF

Primary Industry-Specific Market: Discrete Manufacturing

TEC Computer Systems, Inc.

30 Tower Road
Newton, MA 02164
(617) 964-3890

CEO: Stephen A. Levine, President
Private Company
Founded: 1976

Employees: 50 (6/86)
Revenue (FYE 12/31/85): \$5 million

The Company: Provides turnkey systems and application software for discrete manufacturing companies

Sources of Revenue:

- Turnkey Systems (80%)
- Application Software (20%)

Key Products:

- Application Software Products (Utilizes DEC PDP-11, VAX, and MicroVAX computers)
 - Shop Floor Data Collection System
 - Job Shop Control System
 - Advanced Manufacturing System
 - MRP II (Manufacturing Resource Planning)
- Turnkey Systems (Utilizes DEC PDP-11, VAX, and MicroVAX computers)
 - MRP (Material Resource Planning)

Target Industries:

- Discrete Manufacturing (100%)

Geographic Markets:

- U.S. (100%)
- Sales Offices: Boston, Chicago, New York

Other:

- TEC is an Authorized Digital Computer Distributor
- TEC has installed more than 100 manufacturing systems

October 1986

Vendor Profile

A Publication from INPUT's Vendor Analysis Program - U.S.

June 1995

Technalysis Corporation

Chairman & CEO: Victor A. Rocchio
President & COO: Jerry Snyder
 6700 France Avenue South
 Minneapolis, MN 55435
Phone: (612) 925-5900
Fax: (612) 925-6082

Status:	Public
Employees:	244 (12/94)
Revenue:	\$ 16,844,569
Fiscal Year End:	12/31/94

Key Points

- Technalysis is a professional services and data processing firm dedicated to designing, developing and implementing data processing applications, products and information systems on mainframe, midrange and client/server computer systems.
- Revenues have not changed substantially over the past five years, and continued losses in two remote branch offices and increased expansion costs contributed to the low earnings in 1994.

- In late 1993, due to marketing problems and lack of significant growth at the branch level, Technalysis closed its start-up office in Denver and suspended operations in its Columbia office.
- In May 1994, Jerry Snyder was appointed president and chief operating officer with responsibility for all branches.
- Technalysis' Minneapolis office still remains the strongest contributor to the revenues and accounted for 82% of the company's revenue in 1994.

Company Description

Technalysis, incorporated in 1967, provides contract programming, systems development and consulting professional services to clients in a range of industries.

Organization and Structure

During 1994, Technalysis provided its services through offices located in four geographic areas—Minneapolis (MN), Southfield (MI), Falls Church (VA) and Cincinnati (OH).

Technalysis had two additional offices in Denver (CO) and Columbus (OH). The Denver was closed in August 1993 and the Columbus office's operations have been suspended.

Company Strategy

Technalysis' strategy is to attract and retain personnel with high professional personal standards.

The company seeks to establish long-term support relationships with its clients that extend beyond the initial development project.

In order to solve various marketing problems, the company is restructuring the operations of its Southfield and Cincinnati offices under the direction of Jerry Snyder.

Financials

Technalysis' 1994 revenue was \$16.8 million, a 6% decrease from 1993 revenue of \$17.9 million. Net income fell 18%, from \$1.5 million in 1993 to \$1.2 million in 1994. A five-year financial summary follows:

**Technalysis Corporation
Five-Year Financial Summary**
(\$ Thousands, except per share data)

Item	Fiscal Year				
	1994	1993	1992	1991	1990
Revenue	\$16,844	\$17,886	\$19,144	\$18,420	\$20,531
• Percent change from previous year	(6%)	(7%)	4%	(10%)	(1%)
Income before taxes	\$2,055	\$2,495	\$1,969	\$3,148	\$3,605
• Percent change from previous year	(18%)	27%	(37%)	(13%)	6%
Net income	\$1,223	\$1,485	\$1,215	\$1,888	\$2,163
• Percent change from previous year	(18%)	22%	(36%)	(13%)	6%
Earnings per share	\$0.56	\$0.68	\$0.56	\$0.87	\$1.00
• Percent change from previous year	(18%)	21%	(36%)	(13%)	18%

Decrease in revenue was attributed to the following factors:

- Reduction in revenue in the company's remote offices
- Unrecognized revenues from the contract with the State of Minnesota
- Increase in operating costs as a percentage of revenue. Technalysis incurred operating expenses that were 89% of revenues in 1994, compared to approximately 87% in 1993.

Interim Results

Revenue for the three months ending March 31, 1995 was \$4.9 million, a 17% increase over \$4.2 million for the same period a year ago. Net income was \$232,096, a 28% decrease from the corresponding period in 1994.

Market Financials

Because of the cross-industry nature of Technalysis' services, there is no concentration of clients within a particular industry.

Technalysis has clients in various industries, including biomedical, construction, distribution, education, energy, engineering, finance, government, health services, insurance, media, process manufacturing, retail, services, telecommunications and transportation.

Professional services fees from various divisions of 3M contributed approximately 18% , 19% and 17% to the company's total revenue for 1994, 1993 and 1992, respectively.

Fees from the State of Minnesota contributed approximately 22%, 18% and

15% to total revenue for 1994, 1993 and 1992, respectively.

Geographic Markets

Virtually all of Technalysis' revenue is derived from the U.S.

The company has clients across the U.S. and has also served clients in Canada, England, Germany, Mexico, New Zealand, Singapore and Switzerland.

Technalysis' Minneapolis office contributed approximately 82% to the total revenue for 1994 with the remaining 18% split between the other three offices.

Employees

As of December 31, 1994, Technalysis had 244 employees, of which 206 were systems analysts/programmers.

Key Products and Services

Professional services provided by Technalysis include contract programming and system design, development and implementation.

The full range of services include:

- Project management
- Feasibility studies
- Requirements analysis
- Systems analysis and design
- Program specifications
- Programming and testing
- System documentation
- Database design and consulting
- Client/server computing
- Installation support
- User training
- Package modification and installation
- Software conversion service
- Systems integration
- Software engineering

Services are provided on an hourly (time and materials) or fixed-price basis. Most of the company's revenue is generated from hourly rate analysis and design and programming contracts in the development of general business applications.

Services are provided primarily at the customer's location, using the customer's computer systems.

Technalysis has custom software development experience in a range of application areas, including client/server, databases, device drivers, fourth generation languages, general business, hardware diagnostics, management information services, networking, on-line and real-time systems, scientific, statistics and telecommunications.

Clients

Technalysis' client list includes more than 60 Fortune 500 companies as well as other large and medium-sized organizations.

Technalysis' largest customers include 3M and the State of Minnesota.

Marketing and Sales

Technalysis markets its services through its headquarters and branch offices.

Alliances

Technalysis has the following alliances:

- IBM Business Partner
- Intersolv Approved Consultant for Exceleator
- Software AG Approved Consultant
- Computer Associates Approved Consultant
- Microsoft Solution Provider

Competitors

Technalysis competes with software divisions of many large companies, including IBM. Each branch office also competes with other independent software companies.

INPUT Assessment

Technalysis' strengths include:

- Customer satisfaction
- Quality of personnel
- The company stock has paid dividends since 1973

Challenges over the coming year include:

- Additional growth of branch offices
- Increased revenue and profit
- Strengthening of sales and marketing efforts

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

September 1994

Technalysis Corporation

Chairman & CEO: Victor A. Rocchio
President & COO: Jerry Snyder
6700 France Avenue South
Minneapolis, MN 55435
Phone: (612) 925-5900
Fax: (612) 925-6082

Status:	Public
Employees:	233 (12/93)
Revenue:	\$ 17,886,361
Fiscal Year End:	12/31/93

Key Points

- Technalysis is a professional services firm dedicated to designing, developing and implementing data processing applications, products and information systems on mainframe, midrange and client/server computer systems.
- Though revenues have not changed substantially over the past five years, the company has operated profitably since its inception.

- In late 1993, due to marketing problems and lack of significant growth at the branch level, Technalysis closed its start-up office in Denver and suspended operations in its Columbia office.
- In an attempt to solve its branch problems, the company has recruited Jerry Snyder, a successful marketing and management individual. In May 1994, Mr. Snyder was appointed president and chief operating officer with responsibility for all branches.
- During 1993, Technalysis finally won a four-year dispute with the IRS.

Company Description

Technalysis, incorporated in 1967, provides contract programming, systems development and consulting professional services to clients in a range of industries.

During 1993, Technalysis won its dispute with the IRS regarding the \$1.1 million that the IRS was attempting to assess the company for excess accumulated earnings for 1986, 1987 and 1988.

Organization and Structure

During 1993, Technalysis provided its services through offices located in six geographic areas—Minneapolis (MN), Southfield (MI), Falls Church (VA), Cincinnati and Columbus (OH) and Denver (CO).

The Denver office was closed in August 1993 and the Columbus office's operations have been suspended.

Company Strategy

Technalysis' strategy is to attract and retain personnel with high professional personal standards.

The company seeks to establish long-term support relationships with its clients that extend beyond the initial development project.

In order to solve various marketing problems, the company is restructuring the operations of its Southfield and Cincinnati offices under the direction of Jerry Snyder.

Financials

Technalysis' 1993 revenue was \$17.9 million, a 7% decreased from 1992 revenue of \$19.1 million. Net income rose 22%, from \$1.2 million in 1992 to nearly \$1.5 million in 1993. A five-year financial summary follows:

Technalysis Corporation
Five-Year Financial Summary
 (\$ Thousands, except per share data)

Item	Fiscal Year				
	1993	1992	1991	1990	1989
Revenue	\$17,886	\$19,144	\$18,420	\$20,531	\$20,735
• Percent change from previous year	(7%)	4%	(10%)	(1%)	17%
Income before taxes	\$2,495	\$1,969	\$3,148	\$3,605	\$3,389
• Percent change from previous year	27%	(37%)	(13%)	6%	6%
Net income	\$1,485	\$1,215	\$1,888	\$2,163	\$2,034
• Percent change from previous year	22%	(36%)	(13%)	6%	18%
Earnings per share	\$0.68	\$0.56	\$0.87	\$1.00	\$0.85
• Percent change from previous year	21%	(36%)	(13%)	18%	20%

Interim Results—Revenue for the six months ending June 30, 1994 were \$8.6 million, compared to \$9.3 million for the same period a year ago. Net income was \$696,000, approximately the same as was reported for the first six months of 1993.

Market Financials

Because of the cross-industry nature of Technalysis' services, there is no concentration of clients within a particular industry.

Technalysis has clients in various industries, including biomedical, construction, distribution, education, energy, engineering, finance, government, health services, insurance, media, process manufacturing, retail, services, telecommunications and transportation.

Professional services fees from various divisions of 3M contributed approximately 19%, 17% and 18% to the company's total revenue for 1993, 1992 and 1991, respectively.

Fees from the State of Minnesota contributed approximately 18%, 15% and 14% to total revenue for 1993, 1992 and 1991, respectively.

Geographic Markets

Virtually all of Technalysis' revenue is derived from the U.S.

The company has clients across the U.S. and has also served clients in Canada, England, Germany, Mexico, New Zealand, Singapore and Switzerland.

Technalysis' Minneapolis office contributed approximately 78% to the total revenue for 1993 with the remaining 22% split between the other five offices.

Employees

As of December 31, 1993, Technalysis had 233 employees, of which 206 were systems analysts/programmers.

Key Products and Services

Professional services provided by Technalysis include contract programming and system design, development and implementation.

The full range of services include:

- Project management
- Feasibility studies
- Requirements analysis
- Systems analysis and design
- Program specifications
- Programming and testing
- System documentation
- Database design and consulting
- Client/server computing
- Installation support
- User training
- Package modification and installation
- Software conversion service
- Systems integration
- Software engineering

Services are provided on an hourly (time and materials) or fixed-price basis. Most of the company's revenue is generated from hourly rate analysis and design and programming contracts in the development of general business applications.

Services are provided primarily at the customer's location, using the customer's computer systems.

Technalysis has custom software development experience in a range of application areas, including client/server, databases, device drivers, fourth generation languages, general

business, hardware diagnostics, management information services, networking, on-line and real-time systems, scientific, statistics and telecommunications.

Clients

Technalysis' largest customers include 3M and the State of Minnesota.

Marketing and Sales

Technalysis markets its services through its headquarters and branch offices.

Alliances

Technalysis has the following strategic alliances:

- IBM Business Partner
- Intersolv Approved Consultant for Excelerator
- Software AG Approved Consultant
- Computer Associates Approved Consultant
- Microsoft Solution Provider

Competitors

Technalysis competes with software divisions of many large companies, including IBM. Each branch office also competes with other independent software companies.

Assessment

Technalysis' strengths include:

- Customer satisfaction
- Quality of personnel
- The company stock has paid dividends since 1973

Challenges over the coming year include:

- Additional growth of branch offices
- Increased revenue and profit
- Strengthening of sales and marketing efforts

COMPANY PROFILE

TECHNALYSIS CORPORATION

6700 France Avenue South
Minneapolis, MN 55435
(612) 925-5900

Victor A. Rocchio, President and CEO
Public Corporation, NASDAQ
Total Employees: 248 (12/91)
Total Revenue, Fiscal Year End
12/31/91: \$18,420,849

The Company

Technalysis Corporation, incorporated in 1967, provides contract programming and systems development professional services. The company also developed and markets several systems and applications software products.

Total 1991 revenue was \$18.4 million, a 10% decrease from 1990 revenue of \$20.5 million. Net income declined 13%, from \$2.2 million in 1990 to \$1.9 million in 1991. A five-year financial summary follows:

TECHNALYSIS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	1991	1990	1989	1988	1987
Revenue	\$18,421	\$20,531	\$20,735	\$17,664	\$14,565
· Percent increase (decrease) from previous year	(10%)	(1%)	17%	21%	8%
Income before taxes	\$3,148	\$3,605	\$3,389	\$2,908	\$2,500
· Percent increase (decrease) from previous year	(13%)	6%	17%	16%	15%
Net income	\$1,888	\$2,163	\$2,034	\$1,720	\$1,333
· Percent increase (decrease) from previous year	(13%)	6%	18%	29%	26%
Earnings per share	\$0.87	\$1.00	\$0.85	\$0.71	\$0.54
· Percent increase (decrease) from previous year	(13%)	18%	20%	30%	26%

During 1991 there was a continued softening of the demands for computer systems analysis and programming services because of the depressed economy. Revenues decreased in both the Detroit and Minneapolis offices, but increased in the other two office areas.

During the first quarter of 1992, the demand for computer analysis and programming services remained about the same as the last quarter of 1991. The company has decided, however, to become more aggressive in its areas of expansion.

- Two new offices have been opened in the first quarter of 1992 in Columbus (OH) and Denver (CO) and other locations are also being investigated.
- The company's plan is to add at least two additional offices every year, either internally or by acquisition.

Technalysis has the following strategic alliances:

- IBM Business Partner
- HP Software Supplier
- Computer Associates Approved Consultant for IDEAL and DATACOM/DB
- Cullinet Approved Consultant for IDMS and ADS/O
- Software AG Approved Consultant for ADABAS and NATURAL
- Intersolv Approved Consultant for Excelerator

As of December 31, 1991, Technalysis had 248 employees, of which 220 were systems analysts/programmers. At the end of 1990, the company had 269 employees.

- The decrease was due to a softening in the economy in the second half of the year.
- The company also uses independent programmers, who are not Technalysis employees, on a part-time basis. The total number of part-time programmers used during 1991 was between 10 and 15.

Technalysis competes with software divisions of many large companies, including IBM and Control Data Corporation. Each branch office also competes with other independent software companies.

Key Products and Services

For each of the past three years, approximately 93% of Technalysis' revenue was derived from professional services and 7% from systems and applications software products.

Professional services provided by Technalysis include contract programming and systems design, development, and implementation.

- These services are provided on an hourly (time-and-materials) or fixed-price basis.
- Most of the company's revenue is generated from hourly rate analysis, design, and programming contracts in the development of general business applications.
- Technalysis has custom software development experience in a range of application areas, including data bases, device drivers, fourth generation languages, general business, hardware diagnostics, management information systems, networking, on-line and real-time systems, scientific, statistics, and telecommunications.
- Technalysis' largest customers include Chrysler Corporation, IBM, the Internal Revenue Service, 3M, Northern State Power, Pillsbury, Procter & Gamble, the State of Minnesota, Target Stores, and Union Carbide.

Technalysis developed and markets certain systems and applications software products nationwide for Honeywell DPS6 and HP 3000 computers. Software product operations have been profitable since 1988.

- Honeywell DPS6 software products marketed by Technalysis include the following:
 - The Distributor System is a set of application packages for distributors. The system was developed by Technalysis in 1982 for an organization of five distributors. There are currently over 35 installations of this system.
 - Technalysis had acquired full ownership and marketing rights to two utility packages. There are currently over 65 installations of these products.
 - TITUS (Technalysis Integrated TPS6 Utility System) is an interactive data base management utility for Honeywell's TPS6 data base management system. The product

licenses for \$3,000 and has an annual maintenance fee of 15% of the purchase price.

- TURF is a report writer for the Honeywell TPS. The product licenses for \$2,000 and has an annual maintenance fee of 15% of the purchase price.
- HP 3000 packages marketed by Technalysis include the following:
 - The Corporate Support System (CSS), introduced in 1982, is a business management system consisting of nine subsystems that can be sold individually or as an entire system. There are currently over 110 companies that have licensed CSS systems or subsystems.
 - The subsystems include CSS Accounts Receivable (\$7,900); CSS Accounts Payable (\$7,900); CSS General Ledger (\$7,900); CSS Fixed Assets (\$7,900); CSS Payroll (\$9,900); CSS Order Processing (\$12,000); CSS Inventory Control (\$12,000); CSS Purchasing/Receiving (\$12,000); and CSS Sales Analysis (\$6,000).
- Technalysis also markets a data base utility to be used with the HP 3000 IMAGE data base management system.

Industry Markets

Because of the cross-industry nature of Technalysis' products and services, there is no concentration of clients within a particular industry.

Technalysis has clients in various industries, including biomedical, construction, distribution, education, energy, engineering, finance, government, health care, insurance, media, process manufacturing, retail, and transportation.

Professional services fees from various divisions of 3M Company contributed approximately 18% and 20% to Technalysis' 1991 and 1990 revenue, respectively. The State of Minnesota contributed about 14% and 13% to 1991 and 1990 revenue, respectively.

Geographic Markets

Approximately 99% of Technalysis' 1991 revenue was derived from the U.S. and 1% from international sources, including Canada.

The company provides its professional services through offices located in six geographic areas--Minneapolis (MN), Southfield

(MI), Falls Church (VA), Cincinnati and Columbus (OH), and Denver (CO).

- During 1991, the Minneapolis office contributed approximately 78% of total revenue, with the Southfield, Falls Church, and Cincinnati offices providing approximately 6%, 10%, and 6%, respectively, of total revenue.

Computer Hardware

Technalysis has the following computers installed at its offices:

- 1 HP 3000
- 1 Honeywell DPS6
- 3 IBM PS/2s

Technalysis does most of its professional services programming at the customer's location using the customer's computers.

COMPANY PROFILE

TECHNALYSIS CORPORATION

6700 France Avenue South
Minneapolis, MN 55435
(612) 925-5900

Victor A. Rocchio, President and CEO
Public Corporation, NASDAQ
Total Employees: 269 (12/90)
Total Revenue, Fiscal Year End
12/31/90: \$20,531,385

The Company

Technalysis Corporation, incorporated in 1967, provides contract programming and systems development professional services. The company also developed and markets several systems and application software products.

Total 1990 revenue was \$20.5 million, compared to \$20.7 million for 1989. Net income rose 6%, from \$2.0 million in 1989 to \$2.2 million in 1990. A five-year financial summary follows:

TECHNALYSIS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	1990	1989	1988	1987	1986
Revenue	\$20,531	\$20,735	\$17,664	\$14,565	\$13,526
• Percent increase (decrease) from previous year	(1%)	17%	21%	8%	6%
Income before taxes	\$3,605	\$3,389	\$2,908	\$2,500	\$2,182
• Percent increase (decrease) from previous year	6%	17%	16%	15%	(12%)
Net income	\$2,163	\$2,034	\$1,720	\$1,333	\$1,056
• Percent increase (decrease) from previous year	6%	18%	29%	26%	(11%)
Earnings per share (a)	\$1.00	\$0.85	\$0.71	\$0.54	\$0.43
• Percent increase from previous year	18%	20%	30%	26%	N/A

(a) Restated to reflect a 3-for-2 stock split on May 4, 1989.

During 1990 there was a softening of the demands for computer systems analysis and programming services. Revenues decreased slightly in both the Detroit and Minneapolis offices.

- Expenses decreased almost 4% in 1990 compared to 1989-- primarily due to smaller bonuses for marketing and management personnel.

Revenue for the three months ending March 31, 1991 was \$4.7 million, a 10% decrease from \$5.2 million for the same period in 1990. Net income was \$491,000, compared to \$499,000 for the same period a year ago.

- During the first quarter of 1991, the demand for professional services continued to weaken in the Detroit and Twin Cities areas. In late January, Technalysis experienced unexpected contract cancellations from several Twin Cities customers undergoing budget cutbacks. Although Technalysis earnings in January were about on target, these cutbacks affected quarterly results.

Technalysis has the following strategic alliances:

- IBM Business Partner
- HP Software Supplier
- Computer Associates' Approved Consultant for IDEAL and DATACOM/DB
- Cullinet Approved Consultant for IDMS and ADS/O
- Software AG Approved Consultant for ADABAS and NATURAL
- Intersolv (Index Technology) Approved Consultant for Excelerator

As of December 31, 1990, Technalysis had 269 employees, of which 240 were systems analysts/programmers. At the end of 1989, the company had 306 employees.

- The decrease was due to a softening in the economy in the second half of the year.
- The company also uses independent programmers, who are not Technalysis employees, on a part-time basis. The total number of part-time programmers used during 1990 was between 10 and 20.
- Technalysis currently has approximately 261 employees.

Technalysis competes with software divisions of many large companies, including IBM and Control Data Corporation. Each branch office also competes with other independent software companies.

Key Products and Services

For each of the past three years, approximately 93% of Technalysis' revenue was derived from professional services and 7% from systems and application software products.

Professional services provided by Technalysis include contract programming and systems design, development, and implementation.

- These services are provided on an hourly (time-and-materials) or fixed-price basis.
- Most of the company's revenue is generated from hourly rate analysis, design, and programming contracts in the development of general business applications.
- Technalysis has custom software development experience in a range of application areas, including data bases, device drivers, fourth generation languages, general business, hardware diagnostics, management information systems, networking, on-line and real-time systems, scientific, statistics, and telecommunications.
- Technalysis' largest customers include Chrysler Corporation, IBM, the Internal Revenue Service, 3M, Northern State Power, Pillsbury, Procter & Gamble, the State of Minnesota, Target Stores, and Union Carbide.

Technalysis developed and markets certain systems and application software products nationwide for Honeywell DPS6 and HP-3000 computers. Software product operations have been profitable since 1988.

- Honeywell DPS6 software products marketed by Technalysis include the following:
 - The Distributor System is a set of application packages for distributors. The system was developed by Technalysis in 1982 for an organization of five distributors. There are currently over 35 installations of this system.

- Technalysis had acquired full ownership and marketing rights to two utility packages. There are currently over 65 installations of these products.
 - TITUS (Technalysis Integrated TPS6 Utility System) is an interactive data base management utility for Honeywell's TPS6 data base management system. The product licenses for \$3,000 and has an annual maintenance fee of 15% of the purchase price.
 - TURF is a report writer for the Honeywell TPS. The product licenses for \$2,000 and has an annual maintenance fee of 15% of the purchase price.
- HP-3000 packages marketed by Technalysis include the following:
 - The Corporate Support System (CSS), introduced in 1982, is a business management system consisting of nine subsystems that can be sold individually or as an entire system. There are currently over 110 companies that have licensed CSS systems or subsystems.
 - The subsystems include CSS Accounts Receivable (\$7,900); CSS Accounts Payable (\$7,900); CSS General Ledger (\$7,900); CSS Fixed Assets (\$7,900); CSS Payroll (\$9,900); CSS Order Processing (\$12,000); CSS Inventory Control (\$12,000); CSS Purchasing/Receiving (\$12,000); and CSS Sales Analysis (\$6,000).
 - Technalysis also markets a data base utility to be used with the HP-3000 IMAGE data base management system.

Industry Markets

Because of the cross-industry nature of Technalysis' products and services, there is no concentration of clients within a particular industry.

Technalysis has clients in various industries, including biomedical, construction, distribution, education, energy, engineering, finance, government, health care, insurance, media, process manufacturing, retail, and transportation.

Professional services fees from various divisions of 3M Company contributed approximately 20% to Technalysis' 1990 revenue. The State of Minnesota contributed about 13% to 1990 revenue.

**Geographic
Markets**

Approximately 99% of Technalysis' 1990 revenue was derived from the U.S. and 1% from international sources, including Canada.

The company provides its professional services through offices located in four geographic areas--Minneapolis (MN), Southfield (MI), Falls Church (VA), and Cincinnati (OH).

- The Minneapolis office contributed approximately 74% of total 1990 revenue, with the Southfield and Falls Church offices providing approximately 10% and 7%, respectively. The Cincinnati office was opened in 1990 and contributed less than 2% of total revenue.

**Computer
Hardware**

Technalysis has the following computers installed at its offices:

- 1 HP-3000
- 1 Honeywell DPS6
- 3 IBM PS/2s

Technalysis does most of its professional services programming at the customer's location using the customer's computers.



COMPANY PROFILE

TECHNALYSIS CORPORATION

6700 France Avenue South
Minneapolis, MN 55435
(612) 925-5900

Victor A. Rocchio, President and CEO
Public Corporation, OTC
Total Employees: 268
Total Revenue, Fiscal Year End
12/31/88: \$17,663,549

The Company

Technalysis Corporation, incorporated in 1967, provides contract programming and systems development professional services. The company has also developed and markets several systems and application software products.

Total 1988 revenue reached \$17.7 million, a 21% increase over 1987 revenue of \$14.6 million. Net income rose 29%, from \$1.3 million in 1987 to over \$1.7 million in 1988. A five-year financial summary follows:

TECHNALYSIS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	1988	1987	1986	1985	1984
Revenue	\$17,664	\$14,565	\$13,526	\$12,744	\$10,330
• Percent increase from previous year	21%	8%	6%	23%	25%
Income before taxes	\$2,908	\$2,500	\$2,182	\$2,479	\$2,014
• Percent increase (decrease) from previous year	16%	15%	(12%)	23%	8%
Net income	\$1,720	\$1,333	\$1,056	\$1,191	\$1,021
• Percent increase (decrease) from previous year	29%	26%	(11%)	17%	10%
Earnings per share	\$1.07	\$0.81	\$0.65	\$0.73	\$0.63
• Percent increase (decrease) from previous year	32%	25%	(11%)	16%	11%

At the beginning of 1988, Technalysis management decided to put more emphasis on revenue growth with a reasonable increase in before tax earnings. The company has targeted similar increases for 1989.

- A portion of the increase in net income for 1988 was the result of reduced state and federal taxes.
- Software product sales rose 21% during 1988, resulting in profitable operations compared to substantial losses in previous years.
- Professional services revenue increased 21% during 1988.

Technalysis has the following strategic alliances:

- IBM Business Partner
- HP Software Supplier
- ADR (Computer Associates) Approved Consultant for IDEAL and DATACOM/DB
- Cullinet Approved Consultant for IDMS and ADS/O
- Software AG Approved Consultant for ADABAS and NATURAL
- Index Technology Approved Consultant for Excelerator

As of December 31, 1988, Technalysis had 268 employees, of which 239 were systems analysts/programmers. The company also uses independent programmers, who are not Technalysis employees, on a part-time basis. The total number of part-time programmers used during 1988 ranged from 10 to 20.

Technalysis competes with software divisions of many large companies, including IBM and Control Data Corporation. Each branch office also competes with other independent software companies.

Key Products and Services

Approximately 89% of Technalysis' 1988 revenue was derived from professional services and 8% from systems and application software products. The remaining 3% of revenue was derived from interest income.

A three-year summary of source of revenue follows:

**TECHNALYSIS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

	FISCAL YEAR					
	1988		1987		1986	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Professional services	\$15,786	89%	\$13,043	90%	\$11,655	86%
Software products	1,439	8%	1,191	8%	1,621	12%
Interest income	439	3%	331	2%	250	2%
TOTAL	\$17,664	100%	\$14,565	100%	\$13,526	100%

Professional services provided by Technalysis include contract programming and systems design, development, and implementation.

- These services are provided on either an hourly rate (time-and-material) or fixed price basis.
- Most of the company's revenue is generated from hourly rate programming contracts for commercial applications rather than engineering or scientific applications.
- Technalysis has custom software development experience in a range of application areas, including data bases, device drivers, fourth generation languages, general business, hardware diagnostics, management information systems, networking, on-line and real-time systems, statistics, and telecommunications.
- Technalysis' largest customers include Chrysler Corporation, IBM, the Internal Revenue Service, 3M, Northwest Airlines, Pillsbury, Procter & Gamble, the State of Minnesota, Target Stores, and Union Carbide.

Technalysis had developed and markets certain systems and application software products nationwide for Honeywell DPS6 and HP-3000 computers. Software product operations were profitable for the first time in 1988.

- Honeywell DPS6 software products marketed by Technalysis include the following:
 - The Distributor System is a set of application packages for distributors. The system was originally developed by Technalysis in 1982 for an organization of five distributors. There are currently over 35 installations of this system.
 - Technalysis had acquired full ownership and marketing rights to two utility packages. There are currently over 65 installations of these products.
 - TITUS (Technalysis Integrated TPS6 Utility System) is an interactive data base management utility for Honeywell's TPS6 data base management system. The product licenses for \$3,000 and has an annual maintenance fee of 15% of the purchase price.
 - TURF is a report writer for the Honeywell TPS. The product licenses for \$2,000 and has an annual maintenance fee of 15% of the purchase price.
- HP-3000 packages marketed by Technalysis include the following:
 - The Corporate Support System (CSS), introduced in 1982, is a business management system consisting of nine subsystems which can be sold individually or as an entire system. There are currently over 110 companies that have licensed CSS systems or subsystems.
 - The subsystems include CSS Accounts Receivable (\$7,900); CSS Accounts Payable (\$7,900); CSS General Ledger (\$7,900); CSS Fixed Assets (\$7,900); CSS Payroll (\$9,900); CSS Order Processing (\$12,000); CSS Inventory Control (\$12,000); CSS Purchasing/Receiving (\$12,000); and CSS Sales Analysis (\$6,000).

Industry Markets

Because of the cross-industry nature of Technalysis' products and services, there is no concentration of clients within a particular industry.

Technalysis has clients in various industries, including biomedical, construction, distribution, education, energy, engineering, finance, government, health care, insurance, media, process and discrete manufacturing, retail, and transportation.

Professional services fees with various divisions of 3M Company contributed approximately 18% to Technalysis' 1988 revenue. The State of Minnesota contributed about 15% to 1988 revenue.

Geographic Markets

Approximately 99% of Technalysis' 1988 revenue was derived from the U.S. and 1% from international sources, including Canada.

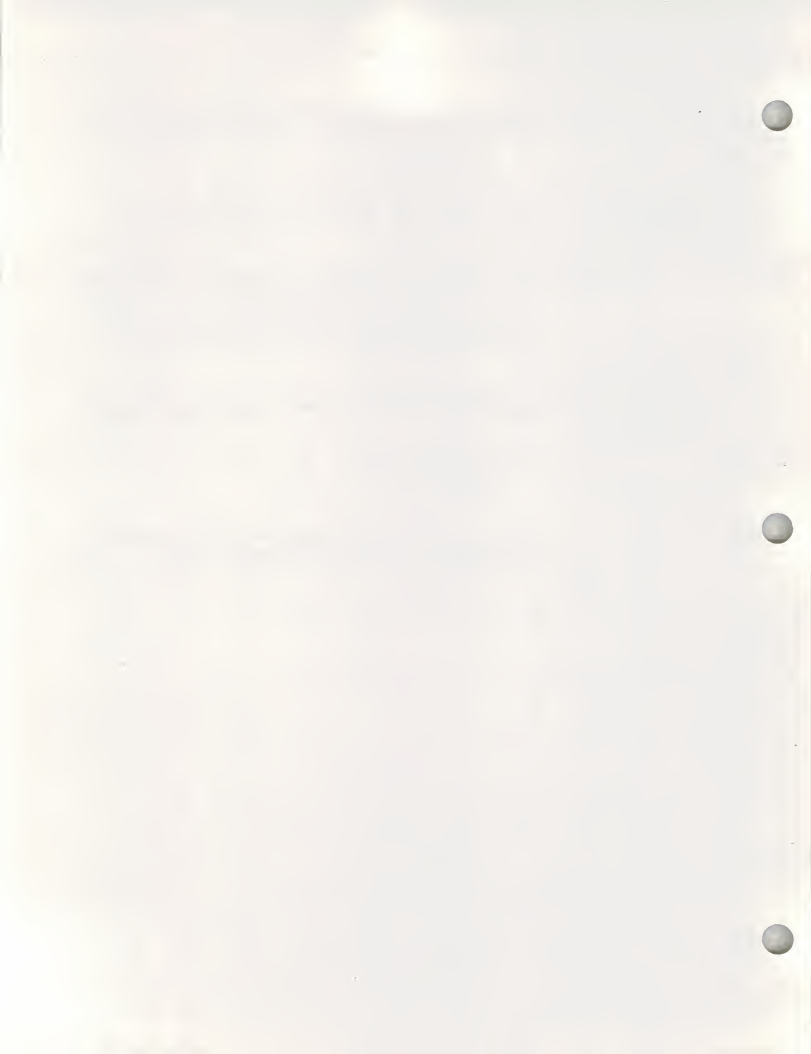
The company has offices located in Falls Church (VA), Southfield (MI), and its headquarters in Minneapolis (MN). Most clients come from these areas, although clients are scattered in smaller concentrations across the country. The Minneapolis office generated 69% of professional services revenue during 1988.

Computer Hardware

Technalysis has the following computers installed at its offices:

- 1 HP-3000
- 1 Honeywell DPS6
- 3 IBM PS/2s

Technalysis does most of its professional services programming at the customer's location using the customer's computers.



FINANCIAL UPDATE TO PROFILE DATED JULY 1986

TECHNALYSIS CORPORATION
6700 France Avenue South
Minneapolis, MN 55435
(612) 925-5900

Victor A. Rocchio, President
Public Corporation, OTC
Total Employees: 185
Total Revenue, Fiscal Year End
12/31/86: \$13,525,796

TECHNALYSIS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1986	1985	1984	1983	1982
Revenue	\$ 13,526	\$ 12,744	\$ 10,330	\$ 8,282	\$ 6,738
• Percent increase from previous year	6%	23%	25%	23%	7%
Income before taxes	\$ 2,182	\$ 2,478	\$ 2,014	\$ 1,871	\$ 1,301
• Percent increase (decrease) from previous year	(12%)	23%	8%	44%	27%
Net income	\$ 1,056	\$ 1,190	\$ 1,021	\$ 927	\$ 651
• Percent increase (decrease) from previous year	(11%)	17%	10%	42%	19%
Earnings per share (a)	\$ 0.65	\$ 0.73	\$ 0.63	\$ 0.57	\$ 0.41
• Percent increase (decrease) from previous year	(11%)	16%	11%	39%	17%

(a) Restated to give effect to 3-for-2 stock split on May 10, 1985.

- Revenue for the six months ending June 30, 1987, was \$7 million, a 12% increase over revenue of \$6.3 million for the same period in 1986. Net income for the period increased 31% from \$593,742 in 1987 to \$451,425 in 1986.

SOURCE OF REVENUE

- Approximately 86% of Technalysis' 1986 revenue was derived from professional services, 12% from application and systems software products, and the remaining 2% was from interest on investments. A three-year source of revenue summary follows (\$ thousands):

TECHNALYSIS CORPORATION

FISCAL YEAR ITEM	1986		1985		1984	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Professional services	\$11,655	86%	\$10,338	81%	\$8,717	85%
Product sales	1,621	12	2,153	17	1,268	12
Interest income	250	2	253	2	345	3
Total	\$13,526	100%	\$12,744	100%	\$10,330	100%

- Major industries Technalysis serves are: manufacturing, insurance, finance, education, computer service bureaus, retail stores, transportation, and government agencies.
- Professional services contracts with various divisions of 3M Company provided approximately 16% of Technalysis 1986 and 1985 revenues.
- Approximately 95% of Technalysis' 1986 revenue was generated in the U.S. and the remaining 5% was from foreign sources.
- The company has clients in the following foreign countries: Canada, England, Germany, Mexico, New Zealand, Singapore, and Switzerland.
- The Minneapolis office contributed approximately 60% of the total professional services revenue for 1986.

COMPANY PROFILE

TECHNALYSIS CORPORATION
6700 France Avenue South
Minneapolis, MN 55435
(612) 925-5900

Victor A. Rocchio, President
Public Corporation, OTC
Total Employees: 188
Total Revenue, Fiscal Year End
12/31/85: \$12,744,393

THE COMPANY

- Technalysis Corporation, incorporated in 1967, provides professional services (specifically system design and software development), application and systems software, and turnkey systems to users and computer manufacturers.
- Total 1985 revenue reached \$12.7 million, an increase of 23% over 1984 revenue of \$10.3 million. Net income rose 17%, from \$1 million in 1984 to approximately \$1.2 million in 1985. A five-year financial summary follows:

TECHNALYSIS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1985	1984	1983	1982	1981
Revenue	\$ 12,744	\$ 10,330	\$ 8,282	\$ 6,738	\$ 6,300
• Percent increase from previous year	23%	25%	23%	7%	18%
Income before taxes	\$ 2,478	\$ 2,014	\$ 1,871	\$ 1,301	\$ 1,025
• Percent increase from previous year	23%	8%	44%	27%	28%
Net income	\$ 1,190	\$ 1,021	\$ 927	\$ 651	\$ 547
• Percent increase from previous year	17%	10%	42%	19%	33%
Earnings per share	\$ 0.73	\$ 0.63	\$ 0.57	\$ 0.41	\$ 0.35
• Percent increase from previous year	16%	11%	39%	17%	35%

- Revenue for the three months ending March 31, 1986 was \$3,077,000, a 2% decrease over revenue of \$3,128,000 for the same period in 1985. Net income for the quarter decreased from \$257,000 in 1985 to \$207,000 in 1986.

- As of December 31, 1985, the company had 188 employees, 158 of whom were systems analysts/programmers providing systems and programming services directly to customers. The company also uses independent programmers who are not employees of the company. The total number of independent programmers used during the year will range from 25 to 40. They operate part-time, off company premises, on a piecework basis.
- Technalysis competes with software divisions of many large companies including IBM and Control Data. Each branch office of the company also competes with other independent software companies.

KEY PRODUCTS AND SERVICES

- Approximately 81% of Technalysis' 1985 revenue was derived from professional services, another 17% was from application and systems software products. The remaining 2% was interest on investments. Turnkey systems sales represent an insignificant proportion of total revenue.
 - Ninety-five percent of the company's professional services revenue comes from projects billed on a time and materials basis. Depending on the client and the type and extent of work to be done, Technalysis may charge on a fixed-price basis.
 - Approximately 75-80% of the company's packaged software revenue comes from Hewlett-Packard-based software. The remainder is derived from software for Honeywell and IBM machines.
- Professional services provided by Technalysis include systems design, programming, and consulting.
 - System design and software development projects consist of four stages. A client may contract to have Technalysis assist with any or all of those stages.
 - Definition of client's requirements.
 - System design (hardware and software).
 - Program design and coding.
 - Testing and documentation.
 - In addition to its system design services, the company provides short-term consulting and temporary programming help on overdue projects.
- An organization of five distributors commissioned Technalysis to develop a set of application packages for distributors. The contract included an agreement that the group of five would pay research and development costs in exchange for a portion of revenue generated by the finished product. Technalysis delivered the system in 1982. In 1983 Technalysis entered into an agreement with Honeywell Inc., whereby Honeywell markets these packages bundled with its own hardware as a turnkey system. This agreement allows Technalysis to market the system as well. This is the company's only turnkey product.

- The company has several application and systems software packages it markets nationwide. The selling of software products was not profitable in 1985 even though product sales accounted for 17% of revenue compared to 12% in 1984.
- Technalysis has acquired full ownership and marketing rights to two utility (systems software) packages as follows:
 - TITUS (Technalysis Integrated TPS6 Utility System) is an interactive data base management utility for Honeywell's transaction processing system TPS6/IFS. TITUS allows a terminal user to modify or inquire into the TPS6/IFS data base. It runs on Honeywell hardware and sells for a \$7,000 one-time license fee and 10% of purchase price per year for maintenance.
 - TURF provides report writing for the Honeywell TPS. Features include data retrieval, formatting, calculating, and printing. It runs on Honeywell hardware (DPS6), and the price is a one-time license fee of \$5,000 and a maintenance fee of 10% of the purchase price per year.
- Technalysis has developed several software products as follows:
 - IMAGINE is an interactive test data generator, a data maintenance utility, and a reformatting tool. It supports IMAGE, ICSOM, and SEQUENTIA test and production files and operates in both on-line and batch environments. It runs on Hewlett-Packard's HP-3000 and costs \$2,000 and 15% of purchase price per year for maintenance.
 - TACS (Technalysis Automated Conversion Service) aids in converting COBOL programs from one version of COBOL to another. It facilitates enhancing character strings and correcting or exchanging words not reserved in the old system, but contained in the new system. It also provides job control language to test the converted program and to unload, convert, and record data files, as well as providing job-control language for actual production procedures. TACS runs on IBM hardware and sells for a one-time fee of \$20,000 to \$50,000.
 - The Corporate Support System is a series of business management applications for the HP-3000. The entire package consists of nine subsystems which can be sold individually or as an entire system.
 - CSS Accounts Receivable includes cash application, charge and credit backs, cash adjustment, write-offs, customer maintenance, batch controlled application, concurrent period processing, on-line credit and payment information and aging receivables, and optional interface

with CSS Distribution and CSS General Ledger. CSS Accounts Receivable sells for a one-time fee of \$7,900 and a yearly maintenance fee of \$950.

- CSS Accounts Payable includes invoice entry, vendor suspend/hold, payment scheduling, cash requirements, purchases by vendor, multi-bank processing, concurrent period processing, and optional interfaces with CSS Distribution and CSS General Ledger. It sells for a one-time fee of \$7,900 and a yearly maintenance fee of \$950.
- CSS General Ledger facilitates journal entries, budgeting, chart of accounts maintenance, allocations, balance controlled entry, trial balance reporting, budget maintenance, concurrent period processing, custom statements, and optional interfaces with other CSS modules. The price is \$7,900 and a \$950 yearly maintenance fee.
- CSS Fixed Assets tracks a company's assets including acquisitions, maintenance, improvements, retirement, trade-in, capitalization of building and improvement costs, trial and time or units-of-utilization and IRS depreciation methods, ACRS, sub-asset capability, ITC and recapture and four recording methods, and optional interface with CSS General Ledger. The price is the same as the above three modules.
- CSS Payroll tracks employee hours/earnings maintenance, special pay and reversals, manual checks, check reconciliation, employee file maintenance, check writing, unlimited quantities of earnings and deductions, multi-state payrolls, local, state, and federal taxes, labor reporting, and multi-bank processing. The payroll module sells for a one-time fee of \$9,900 and \$1,200 yearly maintenance.
- CSS Order Processing handles credit/debit memos, warehouse transfers, variable pricing at product/customer level, cash sales, credit sales, and drop ships. The system also prints invoices and provides credit history by customer. Interfaces with CSS Inventory Control and CSS Accounts Receivable. CSS Order Processing sells for a \$12,000 one-time fee and \$1,440 yearly maintenance.
- CSS Inventory Control provides on-hand adjustments, cost and price controls, inventory maintenance/inquiry, and BOM. Physical inventory, standard average, and LIFO and FIFO are available. Interfaces with CSS Order Processing and CSS Purchasing/Receiving. The system is priced at \$12,000. Annual maintenance is \$1,460.

- CSS Purchasing/Receiving orders stock/non-stock items, provides full and partial receipts and purchase contracts, handles purchase order entry, tracks cost and receipts, and updates CSS Inventory. It sells for \$12,000, with a yearly maintenance fee of \$1,460.
- CSS Sales Analysis maintains sales history; inquiry and budgets; produces sales reports by customer, product, state, taxes, salesperson, and region; and interfaces with CSS Order Processing. CSS Sales Analysis costs \$6,000, with a yearly maintenance fee of \$720.
- CSS programs can be purchased as an entire package, as individual programs, or as any combination. Technalysis markets two sub-packages of the system--CSS Financial and CSS Distribution.
 - CSS Financial is an integrated on-line financial management system including Accounts Payable, Accounts Receivable, General Ledger, Fixed Assets, and Payroll. It sells for a one-time fee of \$36,500 and a yearly maintenance fee of \$4,400.
 - CSS Distribution consists of Inventory Control, Order Processing, Purchasing and Receiving, and Sales Analysis modules. This is not the same package that was commissioned by five distributors and delivered in 1981. CSS Distribution integrated with CSS Financial and sells for a one-time fee of \$42,000 and a yearly maintenance fee of \$5,000.

INDUSTRY MARKETS

- Because of the cross-industry nature of Technalysis' products and services, there is no concentration of clients within a particular industry. Technalysis' business comes from a broad range of industries and government.
- Professional services contracts with various divisions of 3M Company provided 16% of Technalysis' 1985 revenue.

GEOGRAPHIC MARKETS

- One hundred percent of Technalysis' 1985 revenue was derived from the U.S.
- The company has offices located in Falls Church (VA), Southfield (MI), and its headquarters in Minneapolis (MN). Most clients come from these areas, although they are scattered in smaller concentrations across the country. The Minneapolis office generates 75% of Technalysis revenue.

COMPUTER HARDWARE

- The company has the following computers installed at its offices:
 - 1 HP-3000.
 - 1 Honeywell Level 6.
- Technalysis does most of its programming at the customer's location using the customer's computer system.

COMPANY BRIEF

Cross Industry: Systems Software

Technical Systems Consultants, Inc.

111 Providence Road
Chapel Hill, NC 27514
(919) 493-1451

CEO: David Shirk, President
Private Company
Founded: 1976

Employees: 15 (10/86)
Revenue (FYE 10/31/86): \$1 million*

The Company: Technical Systems Consultants develops and markets specialized systems software for microcomputers with Motorola 68010 and 68020 processors

Sources of Revenue:

- Systems Software (100%)

Key Products:

- Systems Software Products
 - Technical Systems Consultants sells its own proprietary operating system, UniFLEX; compilers for the COBOL, FORTRAN, and C languages; BASIC interpreters; and other utilities software such as printer spoolers, text processors, and search editors.
 - UniFLEX sales represented 80% of fiscal 1986 revenue. The operating system is used on systems ranging from multi-user, multi-tasking systems to embedded, ROM-based, real-time target systems. The system is sold either off-the-shelf or as a customized product. The software is modeled after the UNIX operating system and is available for microcomputers from Motorola, Force Computers, and Ironics.

Geographic Markets:

- U.S. (65%)
- Non-U.S. (35%)
- Software is sold directly to end users and systems integrators, and through OEM agreements. Outside the U.S., the company sells its products through dealers and other marketing representatives.

*INPUT estimate

October 1986



COMPANY HIGHLIGHT

TECHNICON DATA SYSTEMS CORPORATION

3255-I Scott Boulevard
Santa Clara, CA 95051
(408) 727-9400

William H. J. Seabrook, President
Division of Revlon, Inc.
Total Employees: 400
Total Revenue, Fiscal Year End
12/31/82: \$37,000,000*
Computer Services Revenue:
\$29,500,000*

THE COMPANY

- Technicon Data Systems Corporation (TDS) provides processing services, software products, turnkey systems, and professional services to the health care industry. TDS also markets terminals and is an OEM for Wang office automation systems.
 - In early 1982 TDS changed its name from Technicon Medical Information Systems Corporation.
- As of December 31, 1982, TDS had approximately 400 employees. The company currently has over 450 employees.
- Major competitors include Shared Medical Systems, Compucare, and Data-care. Other competitors include Electronic Data Systems and IBM.

KEY PRODUCTS AND SERVICES

- Approximately 80% of 1982 revenue was derived from computer services and 20% from terminal sales and leasing.
 - The majority of computer services revenue was derived from applications software, followed by turnkey systems and professional services. A small percent was derived from remote computing processing services.
- The Medical Information System (MIS) is TDS's primary software product offering. MIS, formerly marketed as the MATRIX automated hospital information system, is designed primarily for hospitals with 350 or more beds.
 - MIS runs on IBM and compatible mainframes and ranges in price from \$500,000 to over \$1 million.

*INPUT estimate

TECHNICON DATA SYSTEMS CORPORATION

- Modules available include the following:
 - RCS (Registration Control System) handles patient admissions, discharges, and transfers.
 - OCS (Order Communications System) provides interactive communications between departments.
 - Additional modules are available for results reporting, patient care, staffing, history files, and appointment scheduling.
- Demographic and charge data is automatically interfaced to TDS's Hospital Financial System.
- Customization of MIS to individual users is provided by coding tables and matrices that identify information to be displayed on the CRT screen.
- TDS markets a proprietary terminal to MIS customers that permits users to enter commands through a light pen menu selection process.
- There are approximately 40 installations of MIS.
- In early 1983 TDS was awarded an \$11.4 million federal government contract to install MIS and supporting software in the William Beaumont Army Medical Center in El Paso (TX).
- The Hospital Financial System (HFS), formerly the MATRIX Financial Management System, runs on IBM and compatible mainframes and can be used by hospitals of any size.
 - Modules include:
 - Patient billing/accounts receivable.
 - Accounts payable.
 - General ledger and budget reporting.
 - Medical records abstraction.
 - Payroll/personnel.
 - Users interface HFS to the mainframe via IBM 3270-type terminals and CICS software.
 - Over 50 clients use HFS.
- In the fall of 1983 TDS introduced two software products scheduled for availability by early 1984. Both products can be interfaced to MIS.
 - A Reimbursement System, which runs on IBM and compatible mainframes, is being developed to provide details on patient symptoms and diagnosis to support new legislation on Diagnostic Related Groups (DRG) and insurance claims.

TECHNICON DATA SYSTEMS CORPORATION

- A Materials Management System, designed for Wang minicomputers, is being developed to control inventory for the hospital industry.
- Although TDS is not actively marketing remote processing services, approximately 20 clients currently access TDS's network for MIS and HFS applications.
 - The company operates one data center in Santa Clara (CA).
 - Processing services contributed a very small percent to total 1982 revenue.
- The Laboratory Data System (LDS) is a turnkey system based on the SEMS minicomputer.
 - Designed for the laboratory environment, the system provides instrument interfaces, scheduling, results reporting, and validation; it also interfaces to MIS.
 - The average system price is \$200,000.
 - There are approximately 35 installations of LDS.
- In 1983 TDS introduced the 32-bit microcomputer-based turnkey Medical Data System for physician offices.
 - The system provides complete patient information, billing, and accounting functions and operates with from 1 to 16 workstations.
 - Designed for either individual practices or group practices of up to 15 physicians, the systems range in price from \$25,000 to \$80,000.
- TDS sells and leases hardware and software and provides maintenance services.
- Professional services consulting available to TDS clients includes cost/benefit analysis, on-site project management, software implementation, and training. These services are generally provided to clients in conjunction with purchases of software or turnkey systems.
- TDS is an OEM for Wang and markets Wang VS systems to clients for word processing, medical record, and other office applications.

INDUSTRY MARKETS

- One hundred percent of TDS's 1982 revenue was derived from the medical/hospital industry.

TECHNICON DATA SYSTEMS CORPORATION

GEOGRAPHIC MARKETS

- One hundred percent of TDS's 1982 revenue was derived from the U.S.
- Regional offices are located in Rockville (MD), Chicago, and Santa Clara (CA).

COMPUTER HARDWARE AND SOFTWARE

- The following computers are installed at TDS's Santa Clara data center:
 - 2 IBM 4341s, DOS/VS(E), VM/CMS.
 - 1 IBM 370/158, DOS/VS(E), VM/CMS.
- Clients access TDS's network via leased lines.

COMPANY HIGHLIGHT

TECHNICON MEDICAL INFORMATION SYSTEMS CORPORATION

3255-I Scott Boulevard
Santa Clara, CA 95051
(408) 727-9400

William H. J. Seabrook, President
Division of Revlon, Inc.
Total Employees: 350
Total Revenue, Fiscal Year End
12/31/80: \$25,168,000

PRINCIPAL BUSINESS Technicon Medical Information Systems Corporation (TMIS) markets a modular software system and offers interactive processing services for the automation of large hospitals.

ACQUISITION ACTIVITY

- TMIS was formed as a subsidiary of Technicon Corporation in 1971. In May 1980, Technicon Corporation was purchased by Revlon, Inc., for a combination of \$230.1 million worth of newly created preferred and common stock, and \$59 million in cash.

FINANCIALS (\$ thousands)

	1980	1979	1978	1977	1976
- Total revenue	\$25,168	\$19,667	\$16,699	\$12,570	\$11,491
- TMIS management anticipates 1981 revenue will reach about \$28 million.					

PRODUCTS AND SERVICES

- TMIS supplies software, terminal equipment, processing services, and professional services associated with hospital automation.
- TMIS's key product is the MATRIX automated hospital information system, composed of: FMS (Financial Management System), RCS (Registration Control System), OCS (Order Communication System), and MIS (Medical Information System).
 - Each system is modular and can be operated independently or used in any combination. Systems differ in level of capability, with each built upon the system preceding it. Client hospitals can install the modular systems in stages.
- MATRIX FMS (Financial Management System) performs the system's financial and billing functions. Hospitals may choose any or all of the following applications:

TECHNICON MEDICAL INFORMATION SYSTEMS CORPORATION

- . Accounts payable.
 - . Accounts receivable and patient billing.
 - . General ledger and budget reporting.
 - . Inventory control.
 - . Medical records abstraction.
 - . Payroll and personnel management.
- MATRIX RCS (Registration Control System) tracks patient location and hospital census. Patient admissions, transfers, and discharges are entered on-line; data is transmitted directly to the MATRIX FMS module to update the patient billing and accounts receivables files.
 - MATRIX OCS (Order Communications System) maintains patient files and controls communications among departments. Departments may be added to the system as desired. OCS captures patient charges and transmits them to MATRIX FMS.
 - MATRIX MIS includes RCS and OCS functions and can add more than 20 modules to perform such functions as results reporting, patient care planning, nurse charting, medications administration, patient history file, and appointment scheduling.
 - There are currently about 25 installations of the complete MATRIX MIS system and another 50 installations of MATRIX FMS.
 - . MATRIX systems operate on IBM 370, 4331, 4341 CPUs and compatible hardware.
 - . The systems operate only with the Technicon Video Matrix Terminals (VMTS) and Technicon Multiprinters (acoustically engineered to minimize sound for a hospital setting).
 - TMIS offers its MATRIX systems on an interactive processing service basis from data centers in Santa Clara, (CA) and Fairfield, (NJ). The TMIS network services some 25 MIS and FMS clients.
 - Professional services associated with installation and customization of the MATRIX systems for individual hospitals are also provided.

INDUSTRY MARKETS One hundred percent of TMIS's revenue comes from the medical/hospital industry.

GEOGRAPHIC MARKETS While the majority of TMIS clients (98%) are from the U.S. (Northwest, Midwest, and Pacific regions), 2% comes from a contract with St. John General Hospital in Canada.

COMPUTER HARDWARE AND SOFTWARE

- Equipment installed at the two TMIS data centers includes:

TECHNICON MEDICAL INFORMATION SYSTEMS CORPORATION

- . 1 IBM 4341 running under DOS/VS.
 - . 2 IBM 370/155s running under DOS/VS.
 - . 1 IBM 370/158 running under VM.
- The TMIS network is accessed via leased lines.



*Purchased
by
Reuben?*

COMPANY HIGHLIGHT

TECHNICON MEDICAL INFORMATION SYSTEMS CORPORATION

3255-I Scott Boulevard
Santa Clara, CA 95051
(408) 249-9400

Ian L. Hicks, President
Wholly Owned Subsidiary of Technicon
Corporation
Total Employees: 350
Total Revenues, Fiscal Year End
12/31/78: \$16,699,000

THE COMPANY

- Technicon Medical Information Systems Corporation (TMIS) was formed when Technicon Corporation purchased Lockheed's Medical Information Systems Division in 1971. TMIS presently operates as a subsidiary of the Technicon Instruments Division.
- TMIS markets an on-line system designed to fully automate large hospitals and medical centers. Both in-house and remote computing arrangements are available.
- TMIS has achieved an average annual growth in revenues of 34% over the last five years. Revenues for 1978 were \$16.7 million, up 33% from 1977 revenues of \$12.6 million. A five year financial summary follows:

TMIS
FIVE YEAR FINANCIAL SUMMARY
(\$ Thousands)

ITEM \ FISCAL YEAR	1978	1977	1976	1975	1974
Revenues	\$16,699	\$12,570	\$11,491	\$ 8,210	\$ 4,991
Percent increase from previous year	33%	9%	40%	65%	28%
Income (loss) before income taxes and extraordinary item	\$ 349	\$ 9	\$ (515)	\$ (853)	\$(1,653)
Percent increase (decrease) from previous year	3,788%	101%	40%	48%	(2)%

- Substantial development costs and long evaluation periods by potential users of TMIS' on-line system resulted in large operating losses through 1976. With the product's maturity and increased acceptance by users, TMIS has now operated at a profit for two consecutive years.

COMPANY HIGHLIGHT/TECHNICON MEDICAL INFORMATION SYSTEMS CORPORATION

- The 350 TMIS employees are divided as follows:

- Marketing and sales	30
- Customer and software support	200
- Computer operations	100
- Administrative	<u>20</u>
TOTAL	350

KEY PRODUCTS AND SERVICES

- TMIS's main product is MATRIX MIS. Installed in its entirety, this system provides automation and integration of all hospital departments.
 - Doctors and nurses provide most input via on-line terminals equipped with lightpens. All data is entered immediately and then automatically transmitted to requesting departments.
 - Billing data is captured as each chargeable action occurs. Accounts are maintained and statements prepared by the central computer. The status of all receivables is available interactively.
 - The MATRIX MIS maintains and stores all patient information. Data, including laboratory reports, medication orders, treatment schedules, nursing notes, and dietary orders, are available from any terminal in the hospital. Files are continuously updated as new data is entered.
 - Minicomputers are installed in departments such as pharmacy, radiology, and laboratory where local storage and processing is required.
- Clients can purchase MATRIX MIS modules in stages, starting with the MATRIX FMS module and adding the RCS and OCS modules later. This packaging allows hospitals to install the system gradually, although full cost savings will not be realized until the system is fully integrated. The three models are:
 - MATRIX FMS (Financial Management System) performs the system's financial and billing functions. Hospitals may choose any or all of the following applications:
 - Accounts payable.
 - Accounts receivable and patient billing.
 - General ledger and budget reporting.
 - Inventory control.
 - Medical records abstraction.
 - Payroll and personnel management.
 - MATRIX RCS (Registration Control System) tracks patient location and hospital census. Patient admissions, transfers, and discharges are entered on-line; data is transmitted directly to the MATRIX FMS module to update the patient billing and accounts receivables files.
 - MATRIX OCS (Order Communications System) maintains patient files and controls communications among departments. Departments may be

COMPANY HIGHLIGHT/TECHNICON MEDICAL INFORMATION SYSTEMS CORPORATION

added to the system as desired. When all features of this module are integrated with the other MATRIX modules, full MATRIX MIS is realized, equal to the full Technicon Medical Information System.

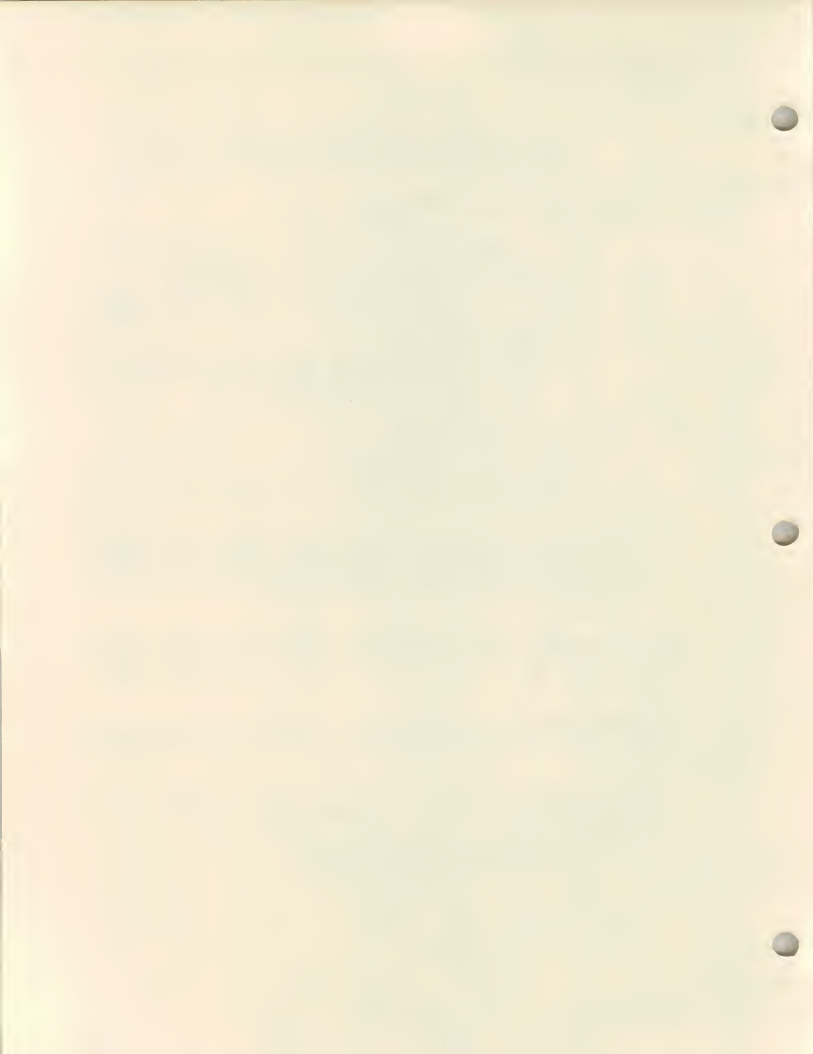
- TMIS negotiates each contract to serve the client hospital's particular situation. The most common arrangements are:
 - Remote processing service: TMIS installs all terminals, minicomputers, and internal communications, and trains all personnel. A 50 kilobit data communications line connects the hospital to a TMIS data center.
 - Software and professional services with optional facilities management: TMIS provides software, terminals, minicomputers, internal communications, and training for hospitals which prefer to install the system on an existing in-house computer.
 - The Technicon Medical Information System operates on IBM System/370, 303X, 4300, Amdahl, Intel, and Magnuson machines under DOS, DOS/VS, DOS/VSE, DOS/VM, and OS.
 - TMIS charges for initial professional services plus yearly software licensing fees.
 - If desired TMIS will also operate the in-house computer under a facilities management contract.
 - MATRIX MIS Service: TMIS will provide remote processing or software for the individual MATRIX modules. Fees are based on the amount of system used.
- TMIS presently has 17 Technicon Medical Information Systems and 48 MATRIX FMS modules installed. Clients include El Camino Hospital, CA (\$1 million per year service contract); Jewish Hospital of St. Louis; Medical College of Virginia Hospitals; Methodist Hospital, IN; Nebraska Methodist, NE; and St. Barnabas Medical Center, NJ.

INDUSTRY MARKETS TMIS derives 100% of its revenues from the medical industry. The majority of MATRIX MIS clients are large hospitals and medical centers.

GEOGRAPHIC MARKETS TMIS markets its services in the U.S. and Canada. A high proportion of the company's revenues are derived from the Northeast, Midwest, and Pacific regions.

COMPUTER HARDWARE TMIS maintains data centers in Santa Clara, CA and Fairfield, NJ. Equipment used in the centers:

- Four IBM System/370 Model 155's, DOS.
- One IBM System/370 Model 145, DOS.



COMPANY HIGHLIGHT

TECHNOLOGY DEVELOPMENT OF CALIFORNIA

3990 Freedom Circle
Santa Clara, CA 95054
(408) 988-3030

Frank S. Greene, Jr., President
and Chairman
Private Corporation
Total Employees: 300
Total Revenue, Fiscal Year
End 12/31/80: \$16,500,000
Total Computer Services Revenue:
\$15,700,000*

PRINCIPAL BUSINESS Technology Development of California (TDC) was founded in 1971 to provide professional services in computer systems and technology to the government and industry. It is a minority owned company (8A) under the guidelines of the Small Business Administration.

FINANCIALS (\$ thousands, except per share data)

	1980	1979	1978
Revenues	\$16,500	\$10,000	\$ 6,100
• Percent increase from previous year	65%	64%	N/A
Net income	\$ 414	\$ 173	\$ 172
• Percent increase from previous year	239%	1%	N/A
Earnings per share	\$ 0.73	\$ 0.28	\$ 0.28
• Percent increase from previous year	261%	0%	N/A

- TDC's revenues for 1981 will be approximately \$25 million, a 52% increase over 1980 revenues. Company revenues are derived almost solely from contract work with the federal government and the Electric Power Research Institute (EPRI) located in Palo Alto, CA.

SOURCES OF REVENUE

Professional services	95%
Maintenance contracts	5%

EMPLOYEES

- TDC has approximately 300 employees, with over 50% degreed professionals in engineering, computer sciences, and other systems related disciplines.

*INPUT estimate

TECHNOLOGY DEVELOPMENT OF CALIFORNIA

- TDC's principal operating divisions are in Santa Clara, CA, and Arlington (Dallas-Ft Worth), TX, with the personnel almost equally divided between the two locations. In 1981, TDC opened a technical support office in Dayton, in support of work with the Aeronautical System Division of the Air Force. TDC also has personnel located on government facilities at NASA's Ames Research Center, Dryden Flight Research Center, and Rockwell's (Space Shuttle) facility in Downey, CA.

PRODUCTS AND SERVICES

- TDC provides system analysis, design, programming services, computer operations and maintenance to clients primarily in the federal government sector. Within the company, these services are segmented into three primary business areas.
 - Automated Test and Measurement Systems.
 - This business area is located in Arlington, TX, with its primary source of revenue coming from the Aeronautical Systems Division of the Air Force. TDC designs, develops, and tests software programs for the test and evaluation of various on-board electronic digital systems of military aircraft. It also provides independent validation and verification of software programs developed by other contractors to the Air Force.
 - Energy.
 - Located in Santa Clara, CA, the majority of TDC's energy revenue is provided by contractual work with the Nuclear and Electrical Divisions of the Electric Power Research Institute. In support of EPRI, it provides verification and standardization of member utility developed software and is responsible for the library maintenance and distribution of software applications to member utilities. Engineering analysis work is also performed for the Nuclear Regulatory Commission (NRC).
 - Large Scale Computing.
 - This business area is located in Santa Clara, CA, and is dedicated exclusively to the support of NASA's Ames Research Center large-scale computing requirements. In August 1981, TDC signed a \$9.8 million contract with Ames for the operation, maintenance, and support of various research directorates. Under this contract, TDC installed and is providing operations, maintenance, user and systems support of a CRAY IS (1300) computer with a front-end CDC CYBER 720 processor. This system, which was operational in November 1981 and was a replacement for the ILLIAC, provides local and remote batch services to NASA and other government agencies. It is a two year contract with two one-year options which calls for the

TECHNOLOGY DEVELOPMENT OF CALIFORNIA

periodic upgrade of the systems based on increased user requirements.

INDUSTRY MARKETS

- The majority of TDC's revenues are derived from contract work with the National Aeronautics and Space Administration (NASA) and the U.S. Air Force. Other sources of revenue are the Electric Power Research Institute and the Nuclear Regulatory Commission.

GEOGRAPHIC MARKETS

- TDC's two operating divisions are located in Santa Clara, CA, and Arlington, TX, with a support office in Dayton, OH.

COMPUTER HARDWARE

1 CRAY IS 1300.
1 CDC CYBER 720.

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

October 1995

Technology Solutions Company (TSC)

Chairman: William H. Waltrip
 President & CEO: John T. Kohler
 205 North Michigan Avenue
 Suite 1500
 Chicago, IL 60601
 Phone: (312) 819-2250
 Fax: (312) 819-2299



Status:	Public
Employees:	423 (5/95)
Revenue:	\$65,817,000
Fiscal Year End:	5/31/95

Key Points

- Technology Solutions Company (TSC) provides business and technology consulting and systems integration services to a range of clients in multiple industries.
- During fiscal 1995, TSC made major changes to facilitate its transition from an entrepreneurial company to a more professionally managed enterprise capable

of sustained growth. Significant steps included:

- Installation of a new management team
- Expansion and reorganization of TSC's practice areas into five groups—Products, Financial Services, Call Center, Managed Health Care and Applications & Training—in response to emerging market opportunities
- Dedication of marketing and sales resources to build a more market-focused organization

- Institution of new compensation programs and human resource management programs to attract and retain high caliber employees
- During fiscal 1995, TSC became alliance partners with SAP and PeopleSoft, joining a small group of integrators worldwide with the implementation skills to work with the client/server software these vendors offer.
- During the first quarter of fiscal 1996, TSC established its first international presence with the opening of an office in Mexico City, Mexico. The company also plans to initiate call center work in Europe during fiscal 1996.

Company Description

TSC provides business and information technology consulting and systems integration services to Fortune 1000 customers.

Services provided include the identification of areas of a client's business that can benefit from computer technology, vision development, business process design, feasibility studies, business case justification, project management, logical and physical systems design, hardware and software selection, programming, implementation, change management, training and benefits realization.

Since its inception in May 1988, TSC has completed large-scale engagements for approximately 250 corporations.

Organization and Structure

TSC is organized into specific practice areas to better focus on the needs of its clients and the skills of its employees and to allow for the formation of smaller, focused working groups for greater efficiency. TSC believes that a small practice area structure gives its clients

very specialized industry and systems knowledge and allows its employees the flexibility and opportunity to grow and develop.

During fiscal 1995, TSC was organized into five practice areas—Products, Financial Services, Call Center, Managed Health Care and Applications & Training.

- *Products*—Serves organizations that make, buy, or sell products, which includes process and discrete manufacturing, retail, publishing, transportation and other industries. The Products practice is broken into two geographically focused areas—East and Central.
- *Financial Services*—Serves capital markets and the banking and insurance industries.
- *Call Center*—Is vertically focused on customer service initiatives in the financial, health care, technology and manufacturing industries.
- *Managed Health Care*—Serves health insurers, hospitals, clinics and HMOs.
- *Applications & Training*—Serves all TSC vertical markets to provide clients with packaged software selection and implementation, education and training.

TSC also has an Infrastructure Support group to facilitate local decision-making and the autonomy of the practice areas and project managers.

In addition to its headquarters in Chicago, TSC has field offices in Atlanta, Dallas, Los Angeles, New York, Philadelphia and Mexico City.

TSC's key executives are summarized on the following page.

TSC Key Executives

Name	Title
William H. Waltrip	Chairman
John T. Kohler	President and CEO
Kelly D. Conway	Executive Vice President
Jack N. Hayden	Executive Vice President
James S. Carluccio	Executive Vice President

Company Strategy

TSC's strategy is to offer a comprehensive package of business and technical consulting services and the resources necessary to successfully implement major systems projects that improve a client's profitability and have attractive internal rates of return.

Specific goals and strategies include:

- Expanding the range of services offered to include more "upstream" consulting, including IT strategy and vision development, business process reengineering and best practices
- Enhancing client/server expertise, including capabilities in software package evaluation and selection, object-oriented development, knowledge-based systems, voice/data communications and electronic commerce
- Geographic expansion, domestically and internationally
- Being more market driven and establishing new practice areas in response to emerging market opportunities

Goals for fiscal 1996 include:

- Continuing profitable growth
- Expanding geographically—TSC has opened its first international office in Mexico City in

order to take advantage of opportunities in SAP consulting and in manufacturing software package selection and implementation. The company plans to expand into Europe, driven by strong interest in TSC's call center solutions from Western European financial institutions. In the U.S., TSC plans to expand its west coast presence.

- Earning market leadership in areas where the company has acquired significant expertise
- Adding strategic business alliances to earn leadership in specific market niches
- Continuing to invest in marketing and recruiting infrastructures
- Continuing to invest in its workforce

Financials

TSC's fiscal 1995 revenue reached \$65.8 million, a 24% increase over fiscal 1994 revenue of \$53.2 million. Net income rose significantly to nearly \$3.4 million, compared to \$35,000 for fiscal 1994.

A five-year financial summary is shown on the following page.

Revenue growth in fiscal 1995 was attributed to growth in engagements won in the areas of call center/customer service, electronic commerce, supply chain management and packaged software implementation. In addition, TSC has capitalized on business opportunities at many of the company's existing clients and is now working in multiple areas of its clients' organizations.

**Technology Solutions Company
Five-Year Financial Summary**
(\$ Thousands, except per share data)

Item	Fiscal Year				
	5/95	5/94	5/93	5/92	5/91
Revenue	\$65,817	\$53,157	\$62,475	\$70,987	\$52,439
• Percent change from previous year	24%	(15%)	(12%)	35%	20%
Income (loss) before taxes	\$4,700	\$(811)	\$8,965	\$19,904	\$13,817
• Percent change from previous year	*	(109%)	(55%)	38%	86%
Net income	\$3,367	\$35	\$5,706	\$12,059	\$8,469
• Percent change from previous year	(a) *	(99%)	(53%)	42%	98%
Earnings per share	\$0.35	\$0.00	\$0.46	\$1.01	\$0.82
• Percent change from previous year	*	(100%)	(54%)	23%	100%

(a) Includes approximately \$1.6 million in pretax charges for agreements with former TSC executives, impacting net earnings by approximately \$0.9 million.

- During fiscal 1995, TSC added 41 new projects at existing clients and added a record 46 new clients during the year, serving a total of 79 clients.
- During fiscal 1995, TSC achieved a 27% increase in billable hours, partially offset by a 2% decrease in average hourly billing rates. This slight decrease in average hourly billing rates is primarily due to the impact of fiscal 1995 hiring and the resulting change in the mix of personnel to include a slightly greater percent of less senior personnel.

Revenue Analysis by Product/Service

Virtually 100% of TSC's revenue is derived from its systems integration and associated consulting services.

The company derives minimal revenue (\$113,000 in fiscal 1995) from software and hardware sales.

Interim Results

Revenue for the three months ending August 31, 1995 reached \$20.7 million, a 54% increase over \$13.4 million for the same period in 1994. Net income rose 55%, from \$746,000 to more than \$1.1 million.

- During the quarter, the number of project managers increased to 44 from 38 on May 31, 1995. During the quarter, TSC started 23 new products and initiated work with nine new clients.
- The company's new clients and projects represent TSC's work and expertise in call center and computer telephony integration, SAP and PeopleSoft packaged software implementations, financial services and supply chain reengineering.

Market Financials

TSC's revenue is derived primarily from the discrete and processing manufacturing, banking and finance and insurance industries.

With the expansion of its practice areas, industries such as health care, telecommunications, media and direct marketing will also contribute to revenue.

Geographic Markets

One hundred percent of TSC's fiscal 1995 revenue was derived from the U.S.

During fiscal 1995, TSC began market evaluation and development work related to the international expansion of its business and the company determined that TSC would establish its first international presence in Mexico. During the first quarter of fiscal 1996, TSC opened an office in Mexico City initially to focus on implementing SAP products. TSC intends eventually to expand the focus of this office to include other TSC services and practice areas.

TSC also began, during fiscal 1995, the review of the potential market in Europe for the company's call center technology. Marketing efforts have begun in this area. Similar to the U.S., TSC's marketing focus for Europe will be in the financial services, telecommunications and high technology business sectors. TSC anticipates that European call center work will begin in fiscal 1996.

Employees

As of August 31, 1995, TSC had a total staff (including practice areas and infrastructure) of 480, segmented as follows:

Vice Presidents.....	44
Senior Principals.....	73
Principals.....	112
Senior Consultants.....	83
Consultants	59
Associate Consultants.....	26
Infrastructure VPs	8
Infrastructure.....	<u>75</u>
	480

The company currently has approximately 500 employees, including 18 in Mexico.

Key Products and Services

TSC provides business consulting and systems integration services to its clients, including:

- Benchmarking and measuring against best practices
- Information technology strategy and vision development
- Business case development with specific return on investment measures
- Business process design and reengineering
- IT architecture and enterprise strategies for data management
- Client/server application design and development
- Packaged software selection and implementation
- Artificial intelligence and knowledge-based systems
- Organizational change management
- Education and training

TSC generally bills for project work on a time-and-materials basis. The size of the

team of TSC's professional staff assigned to a particular project varies depending on the size of the project and the stage of implementation. TSC's professional staff assigned to a project is billed out at various rates, depending on the level of expertise of each individual.

One way in which TSC believes that it differentiates itself in the systems integration market through its business case process.

- TSC likes to start each project—regardless of practice area—with a business case justification that clearly spells out the business benefits that will result from the systems investment, along with various financial measurements of the benefits, including internal rate of return.
- The business case analyzes the client's current business objectives, operational structure and systems architecture, evaluating which areas will bring the greatest return on the client's investment.
- During the process, TSC educates the client about relevant technological options and recommends how the client can best employ the technology to meet its objectives.

TSC's model for delivering technology solutions relies on co-managing the project with the client in a cooperative partnership. The typical TSC team is led by a senior project manager averaging 22 years of experience who is assigned full-time on-site to manage the project. Working with this individual are 10 experienced TSC professionals averaging 14 years of experience.

TSC has a range of technical skills in the following technologies:

- Client/server
- Telecommunications
- Relational database management
- Voice/data integration
- Data/information warehouse
- Image processing
- Intelligent workstations
- Network integration
- Expert systems
- Object-oriented strategies

A summary of services by practice area follows:

Products

TSC's largest practice area, the Products group serves organizations that make, buy, or sell products, which includes packaged goods companies, pharmaceutical and other suppliers to the health care industry, retail, wholesale, mail order, engineering firms, commercial manufacturers, transportation/logistics and textile and apparel companies. Characteristics of these clients include a large customer base, an extensive product line, significant transaction processing loads and large numbers (hundreds of thousands) of remote locations and staff to support.

Areas of specialization include supply chain reengineering (order entry and fulfillment, distribution, logistics), sales force automation, direct marketing and electronic commerce applications.

Financial Services

Also one of TSC's most well-established practices, Financial Services serves capital markets and the banking and insurance industries.

Areas of specialization in this practice are include asset and portfolio management, global trading systems, sales force automation and correspondent banking applications.

Call Center

Call Center is one of TSC's fastest growing practice areas and is vertically focused in the financial services, health care, technology and manufacturing industries.

Projects in the Call Center practice area typically include the evaluation of current call center operations, benchmarking and best practices analysis, system design and architecture and implementation involving a variety of hardware, software and technologies, including the integration of voice and data technology, artificial intelligence, imaging, client/server and desktop tools.

The practice area targets firms with inbound/outbound call centers or telemarketing centers which provide such functions as sales, service, technical support and customer inquiry.

Managed Health Care

This practice area was established in fiscal 1995 to serve health insurers, hospitals, clinics and HMOs.

Managed Health Care concentrates on integrating medical delivery systems and building solutions for medical cost control, hospital expense management and medical practice management.

Applications & Training

The Application & Training practice area provides clients with packaged software selection and implementation, education and training. The group has special teams

devoted to the implementation of SAP and PeopleSoft software.

This practice area, formed during fiscal 1995, serves all TSC vertical markets, including commercial manufacturers, engineering companies, distribution and logistics companies, aerospace and defense contractors and other firms choosing to install an application software package developed by a third-party vendor.

Clients

Clients have included AT&T, Aetna, Borden, Book-of-the-Month Club, Chicago Board Options Exchange, ConAgra, The Equitable, Fidelity Investments, GE Aircraft Engine, Georgia-Pacific, Goldman Sachs, Kidder Peabody, Pepsi-Cola Company, Ralston Purina Company, Rockwell, Square D and Whirlpool Corporation.

Marketing and Sales

TSC markets its services through an integrated marketing program.

Alliances

In May 1995, TSC became a SAP Alliance Partner.

In December 1993, TSC became a PeopleSoft Implementation Partner.

Although TSC is not currently involved in the sale or resale of hardware, it has in the past, on occasion, acted as a value-added reseller for Hewlett-Packard, Digital, Sun Microsystems and Tandem Computers.

Competitors

TSC's major competitor is Andersen Consulting. Other competitors include the consulting units of the other Big Six accounting firms.

INPUT Assessment

TSC's strengths include:

- Technology depth and expertise in key business applications
- Scope of services from vision development through implementation and benefits realization
- Project management skills tested in complex large-scale integration engagements
- Model of delivery that relies on full-time, on-site project management in small teams of very senior people averaging 14 years of experience

- Commitment to partnering with the client to co-manage the project

- Knowledge and skills transfer to ensure successful implementation

Challenges over the coming year include:

- Capitalizing on strengths to enter the international market
- Continuing to attract and retain top talent in the industry

**TECHNOLOGY SOLUTIONS
COMPANY (TSC)**

205 North Michigan Avenue
Chicago, IL 60601
Phone: (312) 819-2250
Fax: (312) 819-2299

Chairman & CEO:	W.H. Waltrip
EVP:	P.J. Cosgrave
EVP:	J.T. Kohler
Status:	Public Corporation
Stock Exchange:	NASDAQ
Total Employees:	317 (5/93)
Total Revenue:	\$62,475,000
Fiscal Year End:	5/31/93

Key Points

- On September 9, 1993, TSC announced a restructuring of senior management and composition of the Board of Directors. TSC created an Office of the Chairman with three members: William H. Waltrip, Chairman and CEO; Paul J. Cosgrave, Executive Vice President; and John T. Kohler, Executive Vice President.
- As part of the restructuring, TSC expects that Vice Chairmen Albert D. Beedie, Jr. and Melvyn E. Bergstein will vacate those positions. Also, the Board of Directors will be realigned to consist of all outside members with the exception of Mr. Waltrip.
- During fiscal 1993, TSC initiated 28 major new client engagement and increased its number of project managers by 10% to 43.
- Due to accelerating economic constraints within the U.S. aerospace and defense industry and changes in procurement practices, TSC has repositioned its Manufacturing Practice to focus on commercial product companies (Products Practice).
- TSC has recently restructured its practice area organization from three practice areas to four practice areas (Consumer Products, Financial Services, Customer Contact Systems/Telecommunications, and Products).

Company Description

TSC provides systems integration and professional services to Fortune 1000 clients. TSC currently serves four practice areas: Consumer Products, Financial Services, Customer Contact Systems/Telecommunications, and Products.

Strategy

TSC's six key business strategies include:

- Concentrating on major corporate projects offering high returns
- Providing a range of services to effectively design, develop, and implement complex, large-scale systems
- Maintaining small, flexible practice areas
- Attracting higher quality project managers and more experienced personnel than its competitors
- Employing a selling strategy that emphasizes a dedicated, senior-level prospecting team
- Establishing a business benefits case as the foundation for client projects

Company History

TSC was formed in May 1988 by A.D. Beedie and other former Arthur Young executives to provide consulting services to major corporations.

In August 1989, TA Associates, a Boston-based \$500 million venture capital firm, purchased approximately 10% of TSC's stock from certain shareholders for \$6 million.

In February 1990, TSC formed its Financial Services industry practice when key personnel of Leveraged Software Systems, Ltd., a small systems consulting and implementation firm concentrating in the financial services industry, joined TSC.

In September 1991, TSC made an initial public offering of approximately 3.6 million shares of common stock, of which 2.9 million were offered in the U.S. and 0.7 million were offered internationally. About one-half of the shares were sold by the company and the remainder by selling shareholders. Estimated net proceeds to the company were \$23.9 million.

In February 1992, TSC made a second public offering of 1.8 million shares of its common stock. All shares were sold by stockholders of the company and TSC did not receive any proceeds from the sale.

In December 1992, Paul J. Cosgrave joined the company as executive vice president and a member of the Board of Directors. Cosgrave was previously president of AGS Computers, a NYNEX company specializing in software solutions and information systems consulting.

In June 1993, TSC named William H. Waltrip chairman and CEO. Waltrip was previously on TSC's Board of Directors. Waltrip is a seasoned public company executive who has spent virtually his entire career in the services industry.

Financials

TSC's fiscal 1993 revenue was \$62.5 million, a 12% decline from fiscal 1992 revenue of \$71.0 million.

- Net income dropped 53% to \$5.7 million from \$12.1 million for fiscal 1992. Fiscal 1993 results include nonrecurring charges of \$10 million related to costs associated with the problems experienced in the aerospace and defense portion of the Manufacturing Practice at the end of fiscal 1992 and the decision in 1993 to de-emphasize the aerospace and defense industry business.
- A five-year financial summary follows:

TSC
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	5/93	5/92	5/91	5/90	5/89
Revenue	\$62,475	\$70,987	\$52,439	\$43,869	\$14,766
• Percent increase (decrease) from previous year	(12%)	35%	20%	197%	N/A
Income before taxes	\$8,965	\$19,904	\$13,817	\$7,428	\$1,479
• Percent increase (decrease) from previous year	(a) (55%)	38%	86%	402%	N/A
Net income	\$5,706	\$12,059	\$8,469	\$4,275	\$854
• Percent increase (decrease) from previous year	(53%)	42%	98%	401%	N/A
Earnings per share	\$0.46	\$1.01	\$0.82	\$0.41	\$0.07
• Percent increase (decrease) from previous year	(54%)	23%	100%	486%	N/A

(a) Includes nonrecurring charges of \$10.0 million in fiscal 1993 and \$2.6 million in fiscal 1992.

Revenue for the three months ending August 31, 1993 was approximately \$13.8 million, an 8% decrease from \$15.0 million for the same period a year ago.

- Management attributes revenue declines to the uncertainties and related effects of senior management issues over the past several months.
- Net income reached nearly \$1.8 million, compared to net income of \$412,000 for the same period a year ago. The prior year's results included one-time nonrecurring charges of \$3.7 million associated with Manufacturing Practice costs previously described.

Market Financials A three-year summary of source of revenue by target market follows:

TSC
THREE-YEAR SOURCE OF REVENUE SUMMARY
 (\$ millions)

MARKET	FISCAL YEAR					
	5/93		5/92		5/91	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Consumer Products	\$37.4	60%	\$30.4	43%	\$24.9	47%
Financial Services	17.4	28%	9.0	13%	3.9	8%
Manufacturing	7.7	12%	31.6	44%	23.6	45%
TOTAL	\$62.5	100%	\$71.0	100%	\$52.4	100%

During fiscal 1993, revenue growth in Consumer Products (23%) and Financial Services (94%) only partially offset the \$23.9 million decrease in Manufacturing revenue. These declines were primarily impacted by the downsizing and other related efforts in the Manufacturing Practice following reductions in government spending in the aerospace and defense industry and the loss of its largest client from fiscal 1992 (Northrop Corporation).

Fifty-three major client engagements (those with revenue in excess of \$100,000) accounted for essentially all of TSC's fiscal 1993 revenue, while 46 such engagements accounted for essentially all of TSC's fiscal 1992 revenue.

During fiscal 1993, TSC has 18 client engagements that provided revenue in excess of \$1 million each, compared with 14 such engagements in fiscal 1992, and 15 such engagements in fiscal 1991.

Geographic Markets

Virtually 100% of TSC's fiscal 1993 revenue was derived from the U.S.

In addition to its headquarters in Chicago, TSC has offices in New York and in the Boston and Dallas metropolitan areas.

Offices in the Los Angeles and Washington, D.C. areas were closed during the year.

Employees

As of May 31, 1993, TSC had 317 employees, segmented as follows:

Project Managers (VP)	43
Other officers	5
Principals	124
Senior Consultants	86
Consultants	39
Support and other	<u>20</u>
	317

As of August 31, 1993, TSC had 291 employees, down 98 from 389 a year ago, largely as a result of restructuring and downsizing activity in the aerospace and defense portion of TSC's Manufacturing Practice.

Key Products and Services

Approximately 99% (\$62.0 million) of TSC's fiscal 1993 revenue was derived from systems integration and professional services and the remainder (\$0.5 million) from software and hardware products.

TSC provides systems integration and various professional services, including systems consulting, feasibility and cost-effectiveness studies, training, testing and maintenance, custom software development and implementation, change management, and project management.

- TSC generally bills for project work on a time-and-materials basis.
- To date, the major systems projects that TSC has completed have ranged in length from four months to over two years and have produced revenues ranging from \$100,000 to \$32 million. Projects have averaged slightly less than one year in duration.
- Since its inception in May 1988, TSC has performed systems work for over 60 major corporations.

TSC believes that one way in which it differentiates itself in the systems integration market is through its business case justification process. TSC likes to start each project--regardless of practice area--with a business case justification that clearly spells out the internal rate of return to be derived from the client's investment.

- The business case analyzes the client's current business objectives, operational structure, and systems architecture, evaluating which areas will bring the greatest return on the client's investment.
- TSC analyzes the impact of the proposed new technology in financial terms, such as internal rate of return, payback, net present value, cash flow, and financial income statement impact.

At the start of fiscal 1993 (June 1, 1993), TSC began moving from three practice areas to four. This restructuring is in keeping with the company's belief that a small, multiple practice area structure allows TSC to give its clients superior industry and systems knowledge, and allows its professionals the greatest opportunity for growth.

TSC is currently organized into the following four practice areas:

Consumer Products and Services: Clients in this practice area include packaged goods companies, pharmaceutical and health care companies, and retail, textile, and apparel companies.

- These clients generally have a large customer base, an extensive product line, significant transaction processing loads, and hundreds or thousands of remote locations and staff to support.
- Typically, TSC works in the operational areas of the client company that have the greatest business and competitive impact, such as inventory management, pricing and promotions, customer service, and order processing.
- This practice has extensive experience in the development of custom software and the evaluation, design, development, and implementation of customer systems, using TSC's expertise in client/server and cooperative processing architectures, relational data base technology, network integration, on-line telecommunications networks, and performance modeling techniques.

Financial Services: Clients within this practice include firms in the capital markets, investment management services, insurance, retail, and commercial banking industries.

- This practice focuses on, among other things, portfolio and risk management, asset valuation and management, customer service, front office and administration, order and transaction processing, real-time global trading, financial and management reporting, and clearance and settlement procedures.
- This practice uses its expertise in client/server and cooperative processing architectures, relational data bases, imaging, network integration, and telecommunications.

Customer Contact Systems/Telecommunications: Clients within this practice include telecommunications companies, media (including publishers and advertisers) and direct marketers.

- TSC works in the areas of these companies that are considered mission-critical, including customer service, pricing and promotions, order processing, and inventory management.
- Also included in this practice area is the design and implementation of customer contact systems, or call centers, that are applicable across various vertical industries.
- Customer contact systems require specific skills in integrating artificial intelligence, voice/data integration, telecommunications, imaging, and relational data bases into client/server or cooperative processing architectures.

Products: Clients within this practice include commercial product manufacturers, engineering companies, distribution and logistics companies, and aerospace and defense contractors.

- Operational areas that the practice focuses on include manufacturing planning and operations, logistics, and inventory management.
- This practice area also does Consumer Products engagements.
- Technologies used include client/server and cooperative processing, relational data bases, network integration, and telecommunications.

A summary of selected TSC projects by industry is shown in the exhibit.

EXHIBIT

TSC PROJECT EXAMPLES

INDUSTRY/CLIENT	PROJECT DESCRIPTION
Insurance	Customer service, direct marketing, imaging, policy administration, claims processing, telemarketing
Insurance	Customer service call center
Insurance	Life insurance client and contract administration and overall IT strategy
Capital Markets	Fixed-income trading and risk management
Capital Markets	Official books and records back office system
Capital Markets	Securities processing system with ties to trade capture and processing, and accounting
Major bank	Customer service call center
Major bank	Trade finance system and electronic EDI
Direct Marketing	Imaging, scanning, and recognition
Direct Marketing	Customer service, promotion and circulation, order processing, distribution, shipping, marketing analysis, and credit management
Consumer Goods	Customer service--business-to-business
Consumer Goods	Customer service call center
Publishing	Inventory forecasting
Transportation	Client/server-based fleet management, order estimating and quoting, shipment tracking, billing, accounts receivable, and collections
Transportation	Freight scheduling, tracking, and administration (billing, rating, and accounting)
Manufacturing	MRP, bill of material, inventory control, shop floor, order entry, accounts payable, accounts receivable, costing, capacity planning, general ledger, master scheduling, and cost of goods
Manufacturing	Computer-aided acquisition and logistics support system, imaging
Manufacturing	Financial and performance management, including order processing, sales management, marketing data base, and general ledger
Manufacturing	Shop floor, design engineering, product development

**Marketing
and Sales**

TSC markets its services primarily through a direct sales force.

Alliances

In May 1992, TSC announced an exclusive consulting agreement with F. Robert Kurimsky, the former head of information services for Philip Morris USA. Mr. Kurimsky will provide TSC with expertise and insight into management and technology issues facing large consumer products companies.

TSC is a value-added reseller for several hardware vendors, including Hewlett-Packard, DEC, Sun Microsystems, and Tandem.

TSC is on target to become a preferred systems integrator for PeopleSoft in early 1994.

Clients

Consumer Products clients during fiscal 1993 included Aetna, AT&T, Ameritech Publishing, Donnelley Marketing, Georgia-Pacific, Paramount Publishing, Pepsi, Ralston Purina, and Whirlpool.

Financial Services clients during fiscal 1993 included Donaldson, Lufkin & Jenrette, The Equitable, Fidelity Investments, Goldman, Sachs & Co., and NationsBank.

Manufacturing clients during fiscal 1993 included GE Aircraft Engine, ConAgra, and Borden.

Competitors

TSC's major competitor is Andersen Consulting.

COMPANY PROFILE

TECHNOLOGY SOLUTIONS COMPANY (TSC)

205 North Michigan Avenue
Chicago, IL 60601
(312) 819-2250

Albert D. Beedie, Jr., President
and CEO
Public Corporation, NASDAQ
Total Employees: 325 (5/91)
Total Revenue, Fiscal Year End
5/31/91: \$52,439,000

The Company

Technology Solutions Company (TSC) provides systems integration and professional services to Fortune 1000 clients. TSC currently serves three industry areas: consumer products, manufacturing (including aerospace and defense contractors), and financial services.

- TSC was formed in May 1988 by A.D. Beedie and other former Arthur Young executives to provide consulting services to major corporations.
- In August 1989, TA Associates, a Boston-based \$500 million venture capital firm, purchased approximately 10% of TSC's stock from certain shareholders for \$6 million.
- In February 1990, TSC formed its Financial Services industry practice when key personnel of Leveraged Software Systems, Ltd., a small systems consulting and implementation firm concentrating in the financial services industry, joined TSC.
- In September 1991, TSC made an initial public offering of approximately 3.6 million shares of common stock, of which 2.9 million were offered in the U.S. and 0.7 million were offered internationally. About one-half of the shares are being sold by the company and the remainder by selling shareholders. Estimated net proceeds to the company of \$21.1 million will be used for general corporate purposes.

TSC's fiscal 1991 revenue reached \$52.4 million, a 20% increase over fiscal 1990 revenue of \$43.9 million. Net income increased 98%, from \$4.3 million in fiscal 1991 to \$8.5 million in fiscal 1991. A three-year financial summary follows:

TSC
THREE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM	FISCAL YEAR		
	5/91	5/90	5/89
Revenue	\$52,439	\$43,869	\$14,766
Percent increase from previous year	20%	197%	*
Income before taxes	\$13,817	\$7,428	\$1,479
Percent increase from previous year	86%	402%	*
Net income	\$8,469	\$4,275	\$854
Percent increase from previous year	98%	401%	*
Earnings per share	\$0.82	\$0.41	\$0.07
Percent increase from previous year	100%	486%	*

* Not meaningful

TSC management attributes revenue increases to an increase in the number of major projects performed. During fiscal 1991, revenues were also bolstered by an increase in average hourly billing rates (which was due to across-the-board increases in TSC's billing rates), staffing projects with more-senior personnel, and smaller discounts from standard billing rates.

- During fiscal 1991, 41 major client contracts (those representing revenues in excess of \$100,000 each) accounted for 98% of total revenues for fiscal 1991, compared to 29 major contracts accounting for 98% of total revenues for fiscal 1990.
- During fiscal 1991, TSC had 15 contracts that provided revenues in excess of \$1 million each, compared with ten such contracts during fiscal 1990.

As of May 31, 1991, TSC had 325 employees, segmented as follows:

Vice Presidents	27
Principals	112
Senior Consultants	91
Consultants	67
Staff	28
	325

TSC's major competitor is Andersen Consulting.

Key Products and Services

Approximately 90% of TSC's fiscal 1991 revenue was derived from systems integration services, 7% from professional services, and 3% from software and hardware products.

TSC provides systems integration and various professional services, including systems consulting, feasibility and cost-effectiveness studies, training, testing and maintenance, custom software development and implementation, and project management.

- TSC generally bills for project work on a time-and-materials basis.
- To date, the major systems projects that TSC has completed have ranged in length from four months to over two years and have produced revenues ranging from \$100,000 to \$23 million. Projects have averaged slightly less than one year in duration and produced, on average, approximately \$2.6 million in gross revenues.
- Since its inception in May 1988, TSC has performed systems work for over 50 major corporations.

TSC's services are performed in three industry-specific practice areas, as follows:

Consumer Products: Clients in this practice area include manufacturers of consumer goods, distributors and dealer networks, retailers, and direct marketers.

- TSC has also developed Direct 2000, an integrated direct marketing system, for Shaklee Corporation, a large direct-mail marketer. TSC has exclusive marketing rights to the software in North America and Europe and is actively marketing the system.

Manufacturing: TSC performs systems consulting and implementation work for manufacturers, remanufacturers, distributors, and transportation and logistics companies.

- TSC often modifies and/or combines manufacturing software packages and integrates enhanced software with existing systems.
- The company has experience and industry and application knowledge in manufacturing systems work, including integration of diverse MRP and MRPII software, design and implementation

of custom systems, computer-integrated manufacturing, and imaging.

- TSC has won major contracts to enhance or implement previously licensed C-POIS MRPII applications. C-POIS was acquired by Andersen Consulting in 1989.
- IBM has selected TSC as one of its preferred integrators for COPICS and for its MTO/DOD and CEM enhancements for Department of Defense contractors.
- TSC has also developed several software packages that provide added functionality to MRPII software and enhance TSC's systems development capabilities, including:
 - PCHS, parts cost history data base
 - TPOP, time-phased order point
 - MARS, material attribution reporting system
 - FOCUS, forecasting algorithms
- TSC's "View" imaging software provides for the display of document images, including engineering drawings. The software can be used on both IBM and compatible PCs, and UNIX workstations. Pricing ranges from \$650 per copy to \$75,000 for a site license.

Financial Services: Clients in this segment have included retail and institutional brokerage firms, commercial banks, and investment and merchant banks.

- TSC has expertise in real-time global trading; corporate capital allocation and risk management; operational workflow re-engineering; financial and management reporting and accounting; trading, financial, and economic analysis; and commercial and investment banking.
- TSC is developing a customizable software product called SUITE (System to Unify Information and Technology Environments) as an outgrowth of work that it has performed for certain of its clients. SUITE is designed to assist clients to bring together disparate software, hardware, and telecommunications technologies.

A summary of selected TSC projects, by industry practice area, is shown in the exhibit.

EXHIBIT

TSC PROJECT EXAMPLES

CLIENT	PROJECT DESCRIPTION
Consumer Products Allied Van Lines, Inc. American International Group, Inc. Bridgestone/Firestone, Inc. Dow Chemical Company Encyclopedia Britannica Information Resources, Inc. Michigan Bulb Company Northern Indiana Public Service Co. Prime Computer Whirlpool	Agent and corporate transportation systems Marketing, administration, and claims systems Point-of-sale/management system Rail fleet management network Order-processing and fulfillment systems Executive information system, revenue tracking and accounts receivable system, cost-profitability analysis Order entry/processing/fulfillment system Customer information system Revenue cycle system Customer service system
Manufacturing The Boeing Company CanCar Works Emerson Electric Co. General Electric Aerospace Group LTV Aerospace & Defense Co. McDonnell Douglas Missiles Systems Northrop Aircraft Division Unisys Corporation Westinghouse Electronics Systems Wilcox Electronics, Inc. Xerox Corporation	IDEF education and training MRPII implementation MRPII implementation MRPII implementation, material cost-estimating system Software selection consulting MRPII education and training Manufacturing and financial software engineering Strategic planning, marketing, and sales support consulting Imaging system MRPII implementation Imaging architecture consulting
Financial Services Bankers Trust New York Corp. Brinson Partners, Inc. Continental Bank Corporation Fidelity Investments First Bank System, Inc. First National Bank of Chicago PaineWebber Group, Inc.	Financial and management reporting system Strategic systems assessment Foreign exchange system Principal trading system for fixed-income securities Asset-based lending systems Trade finance, EDI, and credit management reporting systems Fixed-income middle-office system

Industry Markets

TSC's fiscal 1991 revenue was derived approximately as follows:

Consumer products	47%
Manufacturing	45%
Financial services	8%
	100%

- For fiscal 1991, approximately 81% of TSC's manufacturing segment revenue was derived from clients in the aerospace and defense industry.

Major clients include Bridgestone/Firestone, Fidelity Investments, First National Bank of Chicago, General Electric Company, IBM, Northrop Corporation, Prime Computer, Westinghouse, and Whirlpool.

Geographic Markets

Approximately 98% of TSC's fiscal 1991 revenue was derived from the U.S. and 2% from international sources.

In addition to its headquarters in Chicago, TSC has offices in the Dallas, New York, and San Francisco metropolitan areas.

COMPANY PROFILE

TSC INC.
205 North Michigan Avenue
Suite 1500
Chicago, IL 60601
(312) 819-2250

Albert D. Beedie Jr., President
Private Corporation
Total Employees: 350
Total Revenue, Fiscal Year End
5/31/90: \$50,000,000

The Company

TSC provides systems integration services to Fortune 1000 clients.

- TSC was formed in May 1988 by A.D. Beedie and other former Arthur Young executives to provide consulting services to major corporations.
- In August 1989, TA Associates, a Boston-based \$500 million venture capital firm, purchased approximately 10% of TSC's stock from certain shareholders for \$6 million.

TSC's fiscal 1990 revenue reached \$50 million, a 233% increase over fiscal 1989 revenue of \$15 million.

TSC currently has 350 employees, up from 240 a year ago. Employees are segmented as follows:

Vice Presidents	28
Principals	100
Senior Consultants	107
Consultants	81
Infrastructure	<u>34</u>
	350

TSC's major competitor is Andersen Consulting.

Key Products and Services

One hundred percent of TSC's fiscal 1990 revenue was derived from systems integration services.

TSC provides the following services:

- MIS effectiveness reviews
- Technical documentation and training
- Hardware selection and implementation

- Strategic systems planning
- Systems design, development, and implementation.

Industry specializations include the following:

- Consumer products
 - Retail
 - Direct marketing
 - Logistics and distribution
- Financial services
 - Commercial and retail banking
 - Securities firms
 - Savings and loans
- Insurance
 - Life
 - Health
 - Property and casualty
 - Investment management
- Manufacturing
 - Aerospace and defense
 - Commercial
- Technology services
 - Image processing
 - Telecommunications
 - Relational data base management
 - Intelligent workstations

Systems integration contracts range from \$1.5 million to \$20 million and generally range in length from six months to two years. Contract examples include the following:

- For Bear Creek, a direct marketer of fresh fruit and flowers, TSC is designing, developing, and implementing a new, integrated system to handle current business and to support additional non-seasonal product lines.
- Major business functions in this systems integration project include promotion and circulation, order processing,

customer service, fulfillment and shipping, merchandising, and management information reporting.

- TSC is assisting in the implementation of a new MRP II Aerospace and Defense manufacturing system, including paperless data collection and all modules of C-POIS for Northrup Electronics Systems Division.
- TSC is providing education for 80% of the employees of the division and is designing the system architecture and the financial system, writing the requirements specification and computer specification, and is programming and testing the financial interfaces.
- For the First National Bank of Chicago (FNBC), TSC is developing a purchase order system to support FNBC's retail, consumer product manufacturer, and other customers.
- The system has two major components: the front-end customer system where FNBC customers using PCs enter the pertinent purchase order data and transmit the data to the FNBC host system (DEC VAX) in Chicago, and the host system where the purchase orders are processed.

Industry Markets

TSC's fiscal 1990 revenue was derived approximately as follows:

Consumer products	54%
Logistics and distribution	33%
Financial services and insurance	<u>13%</u>
	100%

Major clients include Allied Van Lines, Bankers Trust, Encyclopedia Britannica, Firestone, IBM, Northrup, World Book Encyclopedia, American International Group, Bear Creek (a division of Shaklee Corp.), Fidelity Investments, General Electric, ITT Financial, and Prime Computer.

Geographic Markets

Approximately 97% of TSC's fiscal 1990 revenue was derived from the U.S. and 3% from international sources.

In addition to its headquarters in Chicago, TSC has offices in Dallas (TX), New York (NY), and San Francisco (CA).

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

November 1996

Technology Solutions Company (TSC)

Chairman: William H. Waltrip
President & CEO: John T. Kohler
205 North Michigan Avenue
Suite 1500
Chicago, IL 60601
Phone: (312) 228-4500
Fax: (312) 228-4501
Internet: <http://www.TechSol.com>



Status:	Public
Employees:	737 (11/96)
Revenue:	\$97,599,000
Fiscal Year End:	5/31/96

Key Points

- Technology Solutions Company (TSC) provides business and technology consulting and systems integration services to a range of clients in multiple industries.
- In September 1996, TSC launched its Telecommunications practice to focus on the telecommunications industry. The move followed the June 1996 acquisition of

Chicago-based McLaughlin & Associates, which formally expanded TSC's work into high-end business strategy consulting.

- During 1996, international subsidiaries were established in Canada and Europe. In May 1996, TSC accelerated its expansion into Europe with the acquisition of Aspen Consultancy, a call center and communications consulting firm based in the U.K.
- In the fall of 1996, the company's Latin American operations were expanded with the opening of an office in Bogota (Columbia).

- In March 1996, TSC was chosen by Baan USA as an International Americas Partner for the installation of Baan's enterprise resource planning (ERP) software.
- In December 1995, TSC announced capabilities to support electronic commerce applications for its clients and prospects, including electronic supply chain and electronic marketplace management for the manufacturing, retail, distribution, financial services, managed health care, and technology industries.

Company Description

TSC provides strategic business and management consulting and information technology consulting and systems integration services to Fortune 1000 customers.

- Strategic business management and consulting services include business strategic planning, market research and analysis, new venture growth services, product and distribution channel planning, and organizational restructuring services.
- Information technology services include the identification of areas of a client's business that can benefit from computer technology, feasibility studies, business case justification, business process redesign and reengineering, benchmarking and best practices, project management, architecture, logical and physical systems design, hardware and software selection, programming, implementation, change management, education, training, and benefits realization.

Since its inception in May 1988, TSC has performed systems work for approximately 300 corporations.

Organization and Structure

TSC is organized into specific practice areas to better focus on the needs of its clients by providing specialized business and systems knowledge. TSC believes that a practice area structure gives its clients access to very specialized industry and systems knowledge and allows its employees the flexibility and opportunity to grow and develop.

TSC recently announced that the company is structured for growth into three units as follows:

Domestic Consulting and Systems Integration includes the following practice areas:

- *Products*—Serves organizations that make, buy, or sell products, which includes process and discrete manufacturing, retail, publishing, transportation and other industries. The focus is on supply chain reengineering, sales force automation, data warehousing, and IT strategy for large product-driven companies.
- *Financial Services*—Serves capital markets and the banking and insurance industries.
- *Call Center*—Is vertically focused on customer service initiatives in the financial, health care, technology and manufacturing industries.
- *Telecommunications*—Provides management consulting and systems integration services, call center, and electronic commerce experience to telecommunications companies.
- *Managed Health Care*—Serves health insurers, hospitals, clinics, and HMOs.
- *Enterprise Applications*—Serves all TSC vertical markets to provide clients with third-party applications software selection and implementation.

International Consulting and Systems Integration includes Europe, Latin America, and Canada.

Strategic and Complementary Businesses includes the following practice areas:

- *McLaughlin & Associates*—Provides high-end strategic consulting
- *Change & Learning Technologies*—Provides change management services, customized education and training programs, and multimedia services
- This unit will also include other acquisitions to be announced.

TSC also has an Infrastructure Support Group to facilitate local decision-making and the autonomy of the practice areas and project managers.

In addition to its headquarters in Chicago, TSC has field offices in Atlanta, Dallas, Los Angeles, New York, Philadelphia, Mexico City (Mexico), Bogota (Columbia), Toronto (Canada), and London (England).

TSC's key executives are summarized below:

TSC Key Executives

Name	Title
William H. Waltrip	Chairman
John T. Kohler	President and CEO
Kelly D. Conway	EVP
Jack N. Hayden	EVP
James S. Carluccio	EVP
Michael J. McLaughlin	EVP
Martin T. Johnson	SVP and CFO

Company Strategy

TSC's strategy is to offer a full-range of strategic business, management, and information technology consulting services

and the resources necessary to successfully implement major systems projects that improve a client's profitability and have attractive internal rates of return.

Information technology consulting services are offered in key application areas within targeted vertical markets.

- This specialization enables TSC to offer application and industry expertise in attractive growth areas such as:
 - Customer relationship solutions
 - Call center and customer service reengineering
 - Electronic commerce
 - Sales process optimization
 - Risk management
 - Supply chain reengineering
 - Packaged software implementation
 - TSC concentrates on large corporate projects because it believes that such projects offer maximum profit potential and represent one of the fastest growing areas of the systems consulting and integration market.
 - Integral with TSC's information technology consulting work is management consulting in the process redesign and reengineering areas.
- TSC's strategy emphasizes the importance of project management and industry-specific and application knowledge.
- TSC dedicates an experienced, senior level project manager (vice president) to manage the typical large project.

- TSC's professional staff have specialized application skills and industry knowledge that enhances their ability to understand the business objectives of their clients and to contribute to day-to-day operating efficiencies.
- This knowledge is important to developing computer systems, as well as redesigning and restructuring business processes.

Goals for fiscal 1997 include:

- More investment in regionalization by recruiting and marketing as close to targeted customers as possible
- Continued geographic expansion in Europe, Canada, and Latin America

- More focus in the key vertical markets where TSC's expertise is the strongest—technology, manufacturing, financial services, health care, and telecommunications
- More focus on being a full-service business and technology consultant to major corporations around the world

Financials

TSC's fiscal 1996 revenue reached \$97.6 million, a 48% increase over fiscal 1995 revenue of \$65.8 million. Net income rose 36%, from \$3.4 million in fiscal 1995 to \$4.6 million in fiscal 1996.

A five-year financial summary is shown below.

Technology Solutions Company Five-Year Financial Summary (\$ Thousands, except per-share data)

Item	Fiscal Year				
	5/96	5/95	5/94	5/93	5/92
Revenue	\$97,599	\$65,817	\$53,157	\$62,475	\$70,987
• Percent change from previous year	48%	24%	(15%)	(12%)	35%
Income (loss) before taxes	\$6,768	\$4,700	\$(811)	\$8,965	\$19,904
• Percent change from previous year	(a) 44%	*	(109%)	(55%)	38%
Net income	\$4,574	\$3,367	\$35	\$5,706	\$12,059
• Percent change from previous year	36%	(b) *	(99%)	(53%)	42%
Earnings per share (c)	\$0.30	\$0.24	\$0.00	\$0.31	\$0.67
• Percent change from previous year	25%	*	(100%)	(54%)	23%

* Not meaningful

(a) Includes one-time pretax charges for financial settlements relating to outstanding securities litigation and litigation involving the company's founders of \$2.3 million and \$0.9 million, respectively.

(b) Includes approximately \$1.6 million in pretax charges for agreements with former TSC executives, impacting net earnings by approximately \$0.9 million.

(c) Restated to reflect a 3-for-2 stock split in July 1996.

Revenue growth in fiscal 1996 was attributed to growth in engagements won in the areas of call center/customer service, electronic commerce, supply chain management and packaged software implementation. In addition, TSC has capitalized on business opportunities at many of the company's existing clients and is now working in multiple areas of its clients' organizations.

- During fiscal 1996, TSC served 94 clients, of whom 50 were new clients. Nine new clients were part of the company's international expansion program, which includes a profitable Mexican subsidiary, and offices in London and Toronto.
- During fiscal 1996, TSC achieved a 42% increase in billable hours, as well as a 2% increase in average hourly billing rates. The increase in billable hours is attributed to the high growth in the overall information technology professional services market, combined with TSC's fiscal 1996 increase in consulting staff and marketing efforts.
- During the quarter, the number of project managers increased to 88 from 72 on May 31, 1996. During the quarter, TSC managed 138 projects at 111 clients, including 39 new clients for the quarter.
- Domestic growth is primarily fueled by project work in enterprise applications and change and learning technologies, including computer-based training and multimedia technologies. Growth also came from call center and customer service reengineering, electronic commerce, and financial services capabilities.
- International revenue represented 15% of total revenue for the quarter. Strong growth came from Latin American (enterprise application solutions supporting large-scale implementation of third-party software packages) and European operations (call center and customer relationship service offerings).

Revenue Analysis by Product/Service

Virtually 100% of TSC's revenue is derived from its systems integration and associated consulting services.

The company derives minimal revenue (\$595,000 in fiscal 1996) from software and hardware sales.

Interim Results

Revenue for the three months ending August 31, 1996 reached \$32.2 million, a 55% increase over \$20.7 million for the same period in 1995. Net income rose 84%, from \$1.16 million to more than \$2.1 million.

Market Financials

TSC's fiscal 1996 revenue was derived approximately as follows:

Industry	Revenue (\$ Millions)	Percent of Total
Products (a)	\$29.0	29.7
Distribution	17.8	18.2
Financial Services	13.9	14.3
Services	13.5	13.9
Technology/ communications	12.8	13.1
Health care	10.3	10.6
Other	0.2	0.2
Total	\$97.6	100.0

(a) Includes discrete and process manufacturing and consumer packaged goods.

Geographic Markets

Virtually all of TSC's fiscal 1996 revenue was derived from the U.S.

TSC initiated its international expansion during fiscal 1996. During the first quarter of fiscal 1996, TSC opened an office in Mexico City initially to focus on implementing SAP products. TSC intends eventually to expand the focus of this office to include other TSC services and practice areas.

During fiscal 1996, TSC also opened an office in London to market in Europe the company's customer relationship call center services. These operations were expanded with the acquisition of Aspen.

In July 1996, TSC opened an office in Toronto (Canada) which supports TSC's efforts to expand its customer relationship call center business into the Canadian market.

In the fall of 1996, TSC opened an office in Bogota to provide enterprise application services.

Acquisitions

In May 1996, TSC acquired Aspen Consultancy, a U.K.-based call center consulting firm, for approximately \$1.6 million plus contingency payments based on future performance. The acquisition was accounted for as a purchase.

- Aspen provides consulting in call center strategy and integration services in call center, voice, and data architectures, and related communications technologies.
- Aspen's clients are concentrated in financial services and high technology and include such firms as Hewlett-Packard, Microsoft, British Airways, Financial

Times, Bouygues, and the Royal Bank of Scotland.

- Aspen had revenue of approximately \$2.4 million for the fiscal year ending March 31, 1996.
- The acquisition gives TSC a strong base of expertise in call center solutions and supports TSC's plans to develop a strong consulting business in Europe through its call center solutions.
- Aspen has become a wholly owned subsidiary of TSC Europe.

In May 1996, TSC acquired McLaughlin & Associates of Schaumburg (IL) for approximately \$2 million. The acquisition was accounted for as a purchase.

- McLaughlin & Associates, founded in 1992, provides business strategic planning, market research and analysis, new venture growth services, product and distribution channel planning, and organizational restructuring for computer, telecommunications, software, and services firms. McLaughlin's strategy clients include IBM, AT&T, GTE, Motorola, Digital, and most of the Bell operating companies.
- The acquisition expands TSC's IT strategy consulting services to include strategic business consulting services and gives TSC deeper skills in the telecommunications market.
- McLaughlin now operates as a division of TSC within the Strategic and Complementary Businesses unit.

Employees

As of May 31, 1996, TSC had a total staff (including U.S. practice areas, Mexico,

Europe, and Infrastructure) of 622, including 68 in the Infrastructure support group.

Professional staff (excluding infrastructure) is segmented as follows:

Vice Presidents.....	14%
Senior Principals.....	19%
Principals.....	29%
Senior Consultants.....	21%
Consultants.....	12%
Associate Consultants.....	5%
	100%

TSC currently has 737 employees worldwide.

Key Products and Services

TSC provides a range of information technology and strategic business and management consulting services to its clients.

Information technology services include a range of systems integration and consulting professional services and include:

- Identification of areas of a client's business that can benefit from computer technology
- Feasibility studies
- Business case justification
- Business process redesign and reengineering
- Benchmarking and best practices
- Project management
- Architecture
- Logical and physical systems design

- Hardware and software selection
- Programming
- Implementation
- Change management
- Education and training
- Benefits realization

Strategic business and management consulting services include:

- Business strategic planning
- Market research and analysis
- New venture growth services
- Product and distribution channel planning
- Organizational restructuring services

TSC generally bills for project work on a time-and-materials basis. The size of the team of TSC's professional staff assigned to a particular project varies depending on the size of the project and the stage of implementation. TSC's professional staff assigned to a project is billed out at various rates, depending on the level of expertise of each individual.

One way in which TSC believes that it differentiates itself in the business and technology consulting market is through its business case justification process.

- TSC likes to start each project—regardless of practice area—with a business case justification that clearly spells out the business benefits that will result from the systems investment, along with various financial measurements of the benefits, including internal rate of return.

- The business case analyzes the client's current business objectives, operational structure, and systems architecture, evaluating which areas will bring the greatest return on the client's investment.
- During the process, TSC educates the client about relevant technological options and recommends how the client can best employ the technology to meet its objectives.

TSC's project management model leverages the expertise of TSC's staff in partnership with the client to build a technology solution. In a typical TSC project, a TSC vice president averaging 23 years of experience serves as project manager. Working with this individual are 10 experienced consultants averaging 18 years of experience to create the foundation project team, which is then completed by pairing with the client's staff.

TSC has a range of technical skills in the following technologies:

- Client/server
- Telecommunications
- Relational database management
- Voice/data integration
- Data/information warehousing
- Image processing
- Intelligent workstations
- Network integration
- Expert systems
- Object-oriented strategies

A summary of services by practice area follows:

Products

TSC's largest practice area, the Products practice area provides systems and business consulting services to companies in the packaged goods, pharmaceuticals, health

care, retail, wholesale, mail order, engineering, commercial manufacturing, transportation/logistics, and textile and apparel. Characteristics of these clients include a large customer base, an extensive product line, significant transaction processing loads, and large numbers (hundreds of thousands) of remote locations and staff to support.

- Typically, TSC works in the operational areas of the client company that have the greatest business and competitive impact, such as customer service, order processing, inventory and production management, pricing and promotions, transportation, and logistics.
- The Products practice area is focused on project work in the electronic commerce, supply chain reengineering, order entry, inventory management, distribution/logistics, sales process optimization, and direct marketing areas.

Financial Services

Also one of TSC's most well-established practices, Financial Services serves capital markets and the banking and insurance industries.

This practice area is focused on defining and implementing systems for financial institutions in three core service areas:

- Investment management systems used by portfolio managers, traders, and client relationship personnel to improve asset returns and customer service
- Risk management systems used by banking and corporate treasury for asset/liability management, to measure and hedge interest rate, currency, and commodity income and value risk

- Sales force automation systems used by sales managers and sales persons to achieve higher productivity from sales and target marketing.
- In addition, the practice area has experience in implementing real-time global trading and back office applications and supporting executive information systems.

Call Center

The Call Center practice area implements customer relationship call center projects and focuses on companies involved in consumer products, health care, telecommunications, high technology, financial services, media (including publishers and advertisers), and direct marketing.

Projects in the Call Center practice area typically include the evaluation of current call center operations, benchmarking and best practices analysis, system design and architecture, and implementation involving a variety of hardware, software, and technologies, including the integration of voice and data technology, artificial intelligence, imaging, client/server, and desktop tools.

The practice area targets firms with inbound/outbound call centers or telemarketing centers that provide such functions as sales, service, technical support, and customer inquiry.

Managed Health Care

This practice area was established in fiscal 1995 to serve health insurers, hospitals, clinics and HMOs.

The Managed Health Care practice areas concentrates on developing systems for

patient care, preventative care, and the control of specialist and hospital expenses.

This practice area can also provide workload and technology evaluation and consulting services to clients seeking acquisitions in the health care area.

Telecommunications

This practice area helps telecommunications companies enhance their customer relationship strategies in a more competitive, deregulated environment, where customer service and product integration will become key differentiators.

Enterprise Applications

This practice area provides clients with third-party packaged software selection and implementation. The group has special teams devoted to the implementation of SAP, PeopleSoft, and Baan.

This practice area focuses on commercial manufacturers, engineering companies, health care, financial services, distribution and logistics companies, aerospace and defense contractors, and other firms choosing to install an application software package developed by a third-party vendor.

McLaughlin & Associates

This practice area provides high-end strategic consulting services primarily to companies in the computer, telecommunications, software, and services industries. Clients have included IBM, AT&T, GTE, Motorola, Digital, and many of the regional Bell operating companies.

Change & Learning Technologies

This practice area provides change management, customized education and training services, and multimedia services.

Clients

Clients have included AT&T, Aetna, Borden, Book-of-the-Month Club, Chicago Board Options Exchange, Cisco Systems, ConAgra, The Equitable, Fidelity Investments, First Union Corporation, GE Aircraft Engine, Georgia-Pacific, Goldman Sachs & Co., Kidder Peabody, Pepsi-Cola Company, Pfizer Pharmaceuticals, Ralston Purina Company, Rockwell, Square D, and Whirlpool Corporation.

Marketing and Sales

TSC markets its services through an integrated marketing program.

Alliances

In March 1996, TSC was chosen by Baan USA as an International Americas Partner for the installation of Baan's ERP software. TSC is working closely with Baan on several customer implementations in the electronic and warehouse distribution industries. TSC has 40 trained and certified Baan professionals.

In May 1995, TSC became a SAP Alliance Partner.

In December 1993, TSC became a PeopleSoft Implementation Partner.

Although TSC is not currently involved in the sale or resale of hardware, it has in the past, on occasion, acted as a value-added reseller for Hewlett-Packard, Digital, Sun Microsystems, and Tandem Computers.

Competitors

TSC's major competitors in the strategic business and management consulting market include Andersen Consulting, Booz Allen & Hamilton, McKinsey & Co., and CSC Index.

Competitors in the information technology and systems consulting market include Andersen Consulting, American Management Systems, Booz Allen & Hamilton, Cambridge Technology Partners, Computer Sciences Corporation, Coopers & Lybrand, Deloitte & Touche, EDS, Ernst & Young, IBM, KPMG Peat Marwick, and Price Waterhouse.

INPUT Assessment

TSC's strengths include:

- Technology depth and expertise in key business applications
- Scope of services from vision development through implementation and benefits realization
- Project management skills tested in complex large-scale integration engagements
- Model of delivery that relies on full-time, on-site project management in small teams of very senior people averaging 18 years of experience
- Commitment to partnering with the client to co-manage the project
- Knowledge and skills transfer to ensure successful implementation

Challenges over the coming year include:

- Assimilating acquisitions into company operations
- Continued expansion internationally
- Continuing to attract and retain top talent in the industry

COMPANY PROFILE

TEKNOLEDGE, INC.

1850 Embarcadero Road
P.O. Box 10119
Palo Alto, CA 94303
(415) 424-0500

Lee Hecht, Chairman
Peter E. Weber, President and CEO
Public Corporation, OTC
Total Employees: 133
Total Revenue, Fiscal Year End
6/30/88: \$14,383,000

The Company

Teknowledge, Inc., incorporated in 1981, provides custom systems development and applied research and development professional services in the area of applied artificial intelligence. Within this field, the company focuses on knowledge systems, commonly termed expert systems.

- Through January 1988, Teknowledge also designed, developed, actively marketed, and supported its own proprietary (patented) expert system tool products. In February 1988, as a result of the growing acceptance of expert systems technology, a rapidly increasing number of competitors, and significant downward price pressures in tool products, Teknowledge implemented a redirection of its business. The company withdrew from the direct marketing of tool products and elected instead to emphasize its services business, applying its own tools as well as those developed by other vendors (AI Corp. and Neuron Data) to deliver knowledge processing solutions to its customers.
- These actions resulted in a significant reduction of the company's work force and a \$5.8 million restructuring charge for the write-off of capitalized software related to the development of expert system tool products and for expenses associated with the redirection of the company's overall business.

In December 1988, Teknowledge announced plans to merge with American Cimflex Corporation of Pittsburgh (PA). After the merger, Teknowledge stockholders will hold approximately 42% of the combined company and American Cimflex stockholders will hold 58%.

- American Cimflex, a private professional services firm that specializes in computer integrated manufacturing (CIM), currently has about 60 discrete manufacturers as clients. The company has 330 employees and revenue of \$35 million.

- The company formed from the merger will be named Cimflex Teknowledge Corporation and will be headquartered in Pittsburgh. Its mission is to be the leading provider of knowledge-based systems and products for CIM for the electronics, automotive, defense, and other discrete manufacturing industries. Cimflex Teknowledge will be a publicly traded company with over 400 employees, assets over \$50 million, working capital of \$40 million, and combined revenue of about \$50 million.
- It is anticipated that the merger will be completed during the first quarter of calendar 1989.

Principal stockholders of Teknowledge (owning an aggregate of 32% of the company's stock as of June 30, 1988) include General Motors Corporation, Framatome, S.A., Procter & Gamble Company, FMC Corporation, and NYNEX Development Company. Revenue from these stockholders was approximately \$5.2 million in fiscal 1988, \$8.1 million in fiscal 1987, and \$8.5 million in fiscal 1986.

Teknowledge's fiscal 1988 revenue was \$14.4 million, a 30% decrease from fiscal 1987 revenue of \$20.5 million. Net losses were \$9.7 million, compared to net losses of \$2.8 million in fiscal 1987. A five-year financial summary follows:

TEKNOLEDGE, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	6/88	6/87	6/86	6/85	6/84
Revenue	\$14,383	\$20,459	\$14,563	\$7,317	\$2,938
• Percent increase (decrease) from previous year	(30%)	40%	99%	149%	40%
Income (loss) before taxes	\$(9,698)	\$(2,822)	\$706	\$(3,113)	\$(4,489)
• Percent increase (decrease) from previous year	(a) (244%)	(500%)	123%	31%	(152%)
Net income (loss)	\$(9,698)	\$(2,822)	\$669	\$(3,113)	\$(4,489)
• Percent increase (decrease) from previous year	(244%)	(522%)	(b) 121%	31%	(152%)
Earnings (loss) per share	\$(1.34)	\$(0.39)	\$0.13	\$(1.16)	\$(2.52)
• Percent increase (decrease) from previous year	(244%)	(400%)	111%	54%	(56%)

(a) Includes a restructuring charge of \$5.8 million.

(b) Includes an extraordinary credit (tax benefit) of \$328,000 from utilization of net operating loss carryforward.

Teknowledge management attributes revenue declines and net losses in fiscal 1988 to the following:

- Professional services revenue declined 11% during fiscal 1988 as a result of increasing competition in the development of custom expert systems applications in general and lower demand for such applications from Teknowledge's investors (historically the primary source of such business).
- Professional services gross margin declined to 24% in fiscal 1988 from 35% in fiscal 1987 as a result of a change in mix of services projects to more smaller and lower margin projects than in fiscal 1987.
- As a part of the redirection of its business, engineering personnel were reassigned from software products

development to software services, resulting in increased services capacity and costs with no immediate available billable work.

- Software products revenue declined 52% during fiscal 1988 as a result of increased competition, downward price pressure in the expert system tool market, and the announced withdrawal from the direct marketing of expert system tool products in February 1988.
- As a result of the significantly reduced volume, software products gross margin declined to 25% in fiscal 1988 as compared to 62% in fiscal 1987.
- As previously discussed, the restructuring of the company's business resulted in a \$5.8 million charge for the quarter ending December 31, 1987.

In June 1988, as part of the redirection, Teknowledge announced an agreement to sell certain assets of its wholly owned subsidiary, Teknowledge Federal Systems, Inc. (TFS), to ISX Corporation for \$1.5 million.

- ISX is an enterprise formed by a group of TFS employees. In the transaction, which closed in November 1988, ISX acquired TFS contracts for mission-oriented military applications.
- TFS retains technology development and support-oriented contracts that are more closely aligned with Teknowledge's current custom development and applied research and development business.

As of June 30, 1988, Teknowledge had 133 employees compared to 199 employees on June 30, 1987. The company currently has 110 employees.

Key Products and Services

Approximately 84% of Teknowledge's fiscal 1988 revenue was derived from custom software development and contract research professional services. The remaining 16% of revenue was derived from expert system software tools.

A three-year summary of source of revenue follows:

**TEKKNOWLEDGE, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

	FISCAL YEAR					
	6/88		6/87		6/86	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Professional services	\$12,150	84%	\$13,580	66%	\$10,275	71%
Software products	2,233	16%	6,879	34%	4,288	29%
TOTAL	\$14,383	100%	\$20,459	100%	\$14,563	100%

The Teknowledge Services Group focuses on providing application development and training professional services to customers in the manufacturing, financial services, and telecommunications industries.

- The company provides custom knowledge system development services. Services provided range from initial feasibility studies, design and prototyping work, and customer training, through the fielding of an operational system.
- Teknowledge has assisted the customers with the following system development projects:
 - CLUES, a life insurance underwriting expert system, for the Mutual Life Insurance Company of New York
 - Console Design Advisor (CDA), a configuration advisor for large communications consoles for Motorola, Inc.
 - Vibration Advisor, a tool for GM dealership mechanics
 - Charley, another GM system, which provides machine tool diagnostics and preventive maintenance
 - Analyst, a financial analysis system for General Motors Acceptance Corporation to help determine the credit worthiness of GM dealers
- Through Teknowledge Federal Systems (TFS) the company provides custom knowledge system development services to defense contractors and the federal government.

- During 1987 TFS received a \$5.5 million follow-on contract from the Rome Air Development Center (U.S. Air Force) and the Defense Advanced Research Projects Agency (DARPA) under the Strategic Computing Initiative to continue research and development on its ABE™ software system for developing cooperating intelligent systems. During fiscal 1988 DARPA released a prototype of ABE.
- TFS also has retained the DARPA Pilot's Associate Real Time contract and a contract for the U.S. Air Force Artificial Intelligence Center in Dayton (OH).
- Teknowledge also provides standardized training courses to assist customers in adding knowledge engineering skills to their existing programming capabilities.
 - The courses cover the integration of knowledge engineering with other data processing techniques, identification of useful knowledge system applications, the acquisition and development of knowledge bases, and the planning and management of knowledge system development projects.
 - During fiscal 1988, the company provided training to more than 500 people. Customers include the Air Force Logistics Center and Rockwell International.

Although Teknowledge has withdrawn from the direct marketing of its expert system tools, the company does make available the following products to its professional services clients:

- M.1 is an entry-level environment for developing and delivering smaller scale knowledge systems on IBM and fully compatible microcomputers running under MS-DOS Version 2.0 or later.
- COPERNICUS™ is a modular architecture that provides a flexible approach to the development of expert systems. COPERNICUS is available for DEC VAX, Apollo, and Sun systems.
- The company also may license AI Corp. and Neuron Data software products to its clients.

Industry Markets

Through 1988, Teknowledge provided its services primarily to Fortune 1000 customers in the financial services, manufacturing, and telecommunications industries, and to government agencies.

A three-year summary of source of revenue by customer follows:

**TEKNOLOGY, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

	FISCAL YEAR					
	6/88		6/87		6/86	
CUSTOMER	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Federal Government	\$5,139	36%	\$4,786	23%	\$3,003	21%
General Motors	3,839	27%	5,230	26%	5,549	38%
Procter & Gamble	1,147	8%	1,663	8%	1,240	9%
FMC Corporation	248	2%	803	4%	715	5%
Other customers	4,010	27%	7,977	39%	4,056	27%
TOTAL	\$14,383	100%	\$20,459	100%	\$14,563	100%

Teknowledge has distribution arrangements with DEC and Computer Power and cooperative marketing arrangements with Tandem, Sun Microsystems, and Hewlett Packard for its software products.

The target market for Cimflex Teknowledge Corporation will be the discrete manufacturing industry.

**Geographic
Markets**

One hundred percent of Teknowledge's fiscal 1988 revenue was derived from the U.S.

**Computer
Hardware and
Software**

Teknowledge has one DEC VAX 8600 (VMS), two DEC VAX 750s (VMS), and nine DEC MicroVAX IIs (Micro VM) installed at its headquarters.



COMPANY PROFILE

TEKKNOWLEDGE, INC.
525 University Avenue
Palo Alto, CA 94301
(415) 327-6600

Lee M. Hecht, Chairman, President, and
CEO
Public Corporation, OTC
Total Employees: 100
Total Revenue, Fiscal Year End
6/30/85: \$7,316,600

THE COMPANY

- Teknowledge, Inc., incorporated in 1981, designs, develops, markets, and supports systems software products and provides professional services in the area of applied artificial intelligence. Within this field, the company focuses on knowledge systems, commonly termed expert systems.
- In January 1986 a preliminary prospectus was issued in anticipation of an initial public offering of 1,680,000 shares of Teknowledge common stock.
 - Of the shares offered by the prospectus, 1.5 million are to be sold by the company and 180,000 are to be sold by selling stockholders.
 - The company's proceeds from the sale will be used to prepay certain debts, to finance capital asset acquisitions (including computer facilities and equipment), increase accounts receivable, expand sales and marketing efforts, and for product development.
- Fiscal 1985 revenue reached \$7.3 million, a 149% increase over fiscal 1984 revenue of \$2.9 million. Net losses were \$3.1 million, compared to net losses of \$4.5 million in fiscal 1984. A three-year financial summary follows:

TEKNOLEDGE, INC.
THREE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	6/85	6/84	6/83
Revenue	\$ 7,317	\$ 2,938	\$ 2,102
• Percent change from previous year	149%	40%	N/A
Income (loss) before taxes	\$ (3,114)	\$ (4,489)	\$ (1,779)
• Percent change from previous year	31%	(152%)	N/A
Net income (loss)	\$ (3,114)	\$ (4,489)	\$ (1,779)
• Percent change from previous year	31%	(152%)	N/A
Earnings (loss) per share	\$ (3.28)	\$ (4.98)	\$ (2.16)
• Percent change from previous year	34%	(131%)	N/A

- Principal stockholders of Teknowledge as of December 31, 1985 are as follows:

<u>Stockholder</u>	<u>Beneficial Ownership Prior to Public Offering</u>	<u>Beneficial Ownership After Offering</u>
General Motors	13.3%	9.1%
Proctor & Gamble	13.0	8.9
FMC Corporation	11.4	7.8
Framatome S.A.	10.4	7.1
NYNEX Development Company	9.8	6.7
Elf Technologies, Inc.	8.4	5.7
The Henry Venture Fund	6.9	4.7

- Revenue derived from Teknowledge stockholders/affiliates was approximately \$3.5 million in fiscal 1985, \$1.7 million in fiscal 1984, and \$0.7 million in fiscal 1983.
- Revenue for the six months ending December 31, 1985 was \$6.2 million, a 130% increase over \$2.7 million for the same period in 1984. Net income was \$621,000 compared to net losses of \$2.3 million for the same period in 1984.
- Teknowledge is organized into three operating groups and one subsidiary, as follows:

TEKNOLEDGE, INC.

- Knowledge Engineering Products and Training (KEPT) designs, develops, markets, and supports Teknowledge's standardized software products and provides training in the use of those products and in knowledge system development methodology.
- Knowledge Engineering Services (KES) develops custom knowledge systems.
 - Teknowledge Federal Systems, Inc., a wholly owned subsidiary, markets custom knowledge system development services to defense contractors and the federal government.
- Research and Advanced Development (RAD) performs contract research for third parties and undertakes internally funded research and development projects. An objective of RAD is to generate new knowledge system technology that can be incorporated in new or existing products or can form the basis for new services.
- As of June 30, 1985 Teknowledge had approximately 100 employees. As of December 31, 1985 the company had 132 full-time employees, segmented as follows:

Marketing/sales/support	17
Product development and support	25
Knowledge system development services	40
Teknowledge Federal Systems	9
Contract research	15
Corporate, finance, and administration	<u>26</u>
	132

- Teknowledge's primary competitors currently include Applied Expert Systems, Inc., Carnegie Group Inc., IBM, Inference Corporation, IntelliCorp, and Texas Instruments.

KEY PRODUCTS AND SERVICES

- INPUT estimates that over 60% of Teknowledge's fiscal 1985 revenue was derived from custom software development and contract research professional services. The remainder of revenue was derived from systems software products and training. A three-year summary of source of revenue follows:

TEKNOLEDGE, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)

ITEM \ FISCAL YEAR	6/85		6/84		6/83	
	<u>Revenue</u>	<u>Percent of Total</u>	<u>Revenue</u>	<u>Percent of Total</u>	<u>Revenue</u>	<u>Percent of Total</u>
Software products and training (a)	\$ 2,708	37%	\$ 466	16%	\$ 632	30%
Custom software services	3,318	45	1,148	39	1,261	60
Contract research	627	9	-	-	-	-
Other (b)	664	9	1,324	45	209	10
Total	\$ 7,317	100%	\$ 2,938	100%	\$ 2,102	100%

- (a) The company's software products were introduced in late fiscal 1984. Revenue reported in this category for fiscal 1984 and 1983 was derived from training services.
- (b) Includes miscellaneous revenue relating to software licensing fees and product development collaboration agreements (primarily with Framentec, a subsidiary of Framatome S.A.).
- Teknowledge's systems software products act as high-level programming languages for the development of knowledge-based expert systems. These products are designed to enable systems developers to create, field, and maintain applications. Teknowledge has licensed its products to more than 175 customers since their introduction in June 1984.
- S.I, originally written in LISP, is designed for large-scale system development.
 - The product was originally introduced for the Xerox Series 1100 LISP workstation and was subsequently ported to the DEC VAX series of minicomputers and the Symbolics 3600 series of LISP workstations.
 - In December 1985 Teknowledge released S.I Version 2.0, a delivery environment written in the C programming language. This delivery environment permits customers to run applications developed using S.I on such computers as the AT&T 7300 and NCR Tower 32 running under UNIX, and DEC VAX and MicroVAX running under VMS.

- Current license fees for S.I range from \$18,000 to \$45,000 for development copies and from \$1,500 to \$9,500 for delivery copies, depending on the number of copies licensed.
- Teknowledge has licensed 65 copies of S.I.
- Teknowledge has announced that S.I will be available as a software product for IBM's new RT Personal Computer 32-bit workstation during 1986.
- M.I is an entry level system for developing and delivering smaller scale knowledge systems on the IBM PC, PC/XT, AT, and compatible microcomputers.
 - The product, originally written in PROLOG, is designed for use by non-specialist programmers in developing and fielding knowledge systems that are compatible with existing installed software and data bases.
 - In October 1985 Teknowledge announced M.I Version 2.0 written in the C programming language. The product is scheduled for delivery in 1986.
 - M.I currently licenses from \$1,500 to \$5,000 for development copies and from \$100 to \$500 for delivery copies, depending on the number of copies licensed.
 - Teknowledge has licensed 408 copies of M.I.
- Maintenance services are provided free for 90 days after initial product licensing, and under annual maintenance contracts thereafter.
- Teknowledge software customers include Delco Products (General Motors), Bell Communications Research, FMC, NCR, Travelers Insurance, American Management Systems, Phillips Petroleum, Utah State University, The First National Bank of Chicago, and the National Weather Service.
- Teknowledge plans to release its own products on IBM mainframes starting in 1986, including a version of S.I written in C and deliverable on IBM mainframes and the IBM AT.
- Teknowledge training services and products include the following:
 - Teknowledge provides standardized training courses to assist customers in adding knowledge engineering skills to their existing programming capabilities.

- The courses cover the integration of knowledge engineering with other data processing techniques, identification of useful knowledge system applications, the acquisition and development of knowledge bases, the planning and management of knowledge system development projects, and the use of Teknowledge software products.
- Scheduled courses are generally given at Teknowledge's headquarters. On-site courses are also available.
- The courses are one to two weeks in duration and are priced at \$2,500 and \$5,000 per person per course for one and two week sessions, respectively.
- In July 1984 Teknowledge introduced T.I., a knowledge system training package consisting of a series of videotaped lectures, demonstrations, and reading materials. T.I. is currently priced at \$595 per copy. Over 290 copies of T.I. have been sold to date.
- Professional services offered by Teknowledge include the following:
 - Custom knowledge system development services are conducted through the Knowledge Engineering Services (KES) Group. Since its inception this group has provided services to over 13 major customers.
 - Large-scale custom development projects are performed in phases, with each phase typically lasting up to three months and total projects continuing for several years.
 - Revenue from typical projects range from \$200,000 to \$2 million.
 - Services provided range from initial feasibility studies, design and prototyping work, and customer training, through the fielding of an operational system.
 - Applications which KES has developed or is currently developing include an intelligent interface for data analysis software; fault diagnosis and preventive maintenance systems; process monitoring systems; materials blending systems; computer configuration systems; and a petroleum drilling advisory system.
 - Through Teknowledge Federal Systems (TFS) the company provides custom knowledge system development services to defense contractors and to the federal government. TFS was awarded a \$1.8 million contract by the Rome Air Development Center (U.S. Air Force) that is funded by the Defense Advanced Research Projects Agency under its Strategic Computing Initiative program.

- Contract research services are conducted through the Research and Advanced Development (RAD) group which was formed in late 1984.
 - RAD is under a two-year contract with the Rome Air Development Center to research and develop a prototype knowledge system development tool called "ABE" for use by the U.S. Department of Defense, related government agencies, and contractors.
 - Other RAD clients include General Motors, FMC, and NCR.

INDUSTRY MARKETS

- Teknowledge derived its fiscal 1985 revenue from a wide range of industries including the following vertical market segments.
 - Discrete and process manufacturing.
 - Banking and finance.
 - Medical.
 - Utilities.
 - Telecommunications.
 - Transportation.
 - Federal, state, and local government.
- Significant clients include the following:
 - General Motors contributed \$2.3 million (32% of revenue) in fiscal 1985, compared to \$96,000 (6% of revenue) in fiscal 1984.
 - Procter & Gamble contributed \$621,900 (9% of revenue) in fiscal 1985, compared to \$235,800 (8% of revenue) in fiscal 1984.
 - Framatome/Framentec contributed \$317,200 (4% of revenue) in fiscal 1985, compared to \$1.3 million (43% of revenue) in fiscal 1984.
- Education and training professional services are targeted toward all Fortune 1000 companies and other professional services organizations. Custom expert systems development services are also targeted to Fortune 1000 companies as well as the federal government through the company's Federal Systems subsidiary.
- System software products are targeted toward Fortune 1000 companies, large systems houses, and applications developers.
- Teknowledge has a distribution arrangement with DEC and cooperative marketing arrangements with Sun Microsystems and Symbolics for its software products.

GEOGRAPHIC MARKETS

- Approximately 92% of Teknowledge's fiscal 1985 revenue was derived from the U.S. The remaining 8% was derived from Europe and Canada.
- The company's subsidiary, Teknowledge Federal Systems, Inc. is located in Thousand Oaks (CA).
- Teknowledge markets its products in Europe through Framentec, a wholly owned subsidiary of Framatome.

COMPUTER HARDWARE AND SOFTWARE

- Teknowledge has the following computers installed at its headquarters for product development:
 - 1 DEC VAX 8600, VMS.
 - 2 DEC VAX 750s, VMS.
 - 25 Xerox 1100s, 1108s, and 1109s, InterLisp-D.
 - 40 IBM PCs, PC-DOS.
 - 6 Symbolics 3600s, Symbolics OS.

COMPANY HIGHLIGHT

TEKNOLOGY INC.
525 University Avenue
Palo Alto, CA 94301
(415) 327-6600

Lee M. Hecht, Chairman and CEO
Private Corporation
Total Employees: 90
Total Revenue, Fiscal Year End
6/30/84: \$2,250,000*

THE COMPANY

- Teknowledge Inc. focuses on selling expert systems software development tools. The company also provides expert systems applications engineering (knowledge engineering) services. In addition, the company offers its clients problem assessment studies and videotaped education and training services. Expert systems (referred to here synonymously as knowledge-based systems) are systems that contain specialized knowledge, both factual and heuristic, and that are able to reach conclusions by applying the specialized knowledge to problems presented by the user. Programming techniques used to develop these systems are the result of research in the academic field of artificial intelligence (AI).
 - Teknowledge was founded in 1981 by computer scientists from Stanford University, Massachusetts Institute of Technology, and The Rand Corporation to provide knowledge engineering consulting and training.
 - In April 1984 General Motors Corporation paid \$3 million to acquire 11% of Teknowledge.
- INPUT estimates that Teknowledge's 1984 revenue reached \$2.3 million, a 77% increase over estimated 1983 revenue of \$1.3 million.
 - Teknowledge's management expects fiscal 1985 revenue to increase substantially over 1984 due to the introduction in Fall 1984 of M.I.a, an attractively priced introductory knowledge engineering development system and training module. This product brings down the entry-level price, thus reaching many new users.
- Teknowledge owns and operates one wholly owned subsidiary, Teknowledge Federal Systems Inc., in Thousand Oaks (CA). The subsidiary provides knowledge engineering products and services to the federal government and government contractors. The subsidiary currently has four employees.

*INPUT estimate

- As of October 1984 Teknowledge had 105 employees segmented as follows:

Software services, customer support, and research and development	52%
Marketing, sales, and general and administrative	<u>48</u>
	100%

- Major competitors for Teknowledge's expert systems software include IntelliCorp Inc., Texas Instruments, and General Research Corporation. Competition for expert systems-related professional services include Bolt, Beranek, and Newman and IntelliCorp.

KEY PRODUCTS AND SERVICES

- All of Teknowledge's fiscal 1984 revenue was derived from professional services related to the development of custom expert systems and knowledge engineering-related education and training.
 - Near the end of Teknowledge's 1984 fiscal year, the company reversed its direction toward custom software development professional services and changed its focus to marketing system software products and packaged education and training professional services.
 - The company's system software products were introduced late in the fiscal year and as a result did not contribute to fiscal 1984 revenues.
 - Teknowledge management anticipates receiving 50% of its fiscal 1985 revenue from the sale of system software products and 50% from professional services sales. Custom systems development is expected to account for half of the professional services revenues, while education and training is expected to account for the remainder. Much of the anticipated education and training revenues are expected to come from the sale of videotaped education and training packages.
- In June 1984 Teknowledge began marketing system software products specifically designed for the development of knowledge-based expert systems. These software products fall into the area of AI research referred to by Teknowledge as structured selection. Future software products will be developed to cover such other areas of AI as signal interpretation, command and control, design, and planning. Teknowledge's system software products are:
 - System I (S.I), introduced in June 1984, is an expert system application development tool and knowledge base management system. The software runs on the Xerox 1100 series and the DEC VAX series computers. A Symbolics implementation will be available in the first quarter of 1985.
 - S.I is written in the LISP programming language.

- S.I ranges in price from \$50,000 to \$80,000. The price includes maintenance and two weeks of training for two systems engineers. Training for additional engineers costs \$5,000 per person.
- M.I, introduced in June 1984, is a knowledge engineering tool for the IBM Personal Computer. It is designed to allow the professional programmer to grasp the concepts of expert systems design and implement systems on the IBM PC.
- M.I is written in the Prolog programming language and runs under PCDOS.
- The price for M.I is \$10,000. The price includes a five day training session for one system engineer. Training for additional engineers costs \$2,500 per person.
- M.Ia, introduced in November 1984, is a scaled down version of M.I that allows the professional programmer to design prototype and demonstration expert systems on the IBM Personal Computer under PCDOS. In addition to the system software, M.Ia includes four hours of videotaped training. This videotaped training is identical to that sold separately as T.I. The price for M.Ia is \$2,000.
- Clients who have purchased Teknowledge's system software include General Motors, Mutual Life of Canada, National Cash Register, Elf Aquitaine, and NASA. Over 170 Fortune 500 companies have purchased Teknowledge's products or services.
- Professional services by Teknowledge consist of expert systems software development and videotaped education and training services.
- Examples of expert systems applications that Teknowledge has designed or is currently developing include an oil drilling advisory system, a computer configuration/order entry system, a prototype advisory and training system for junior bank lending officers, an automobile engineer sub-system maintenance advisory system, and a telecommunications field service office staffing and equipment advisory system.
- Teknowledge is also currently under contract with General Motors to develop a knowledge-based expert diagnostics system to assist automotive mechanics in the diagnosis of automobile engine malfunctions.
- A videotaped tutorial on knowledge engineering, called T.I, was released in July 1984. The course comes with four hours of videotaped training, a training manual, and a hands-on exercise diskette which runs on the IBM Personal Computer under PCDOS.
- In November 1984, at the same time as the release of M.Ia, Teknowledge lowered the price of T.I from its initial price of \$2,000 to \$595.

INDUSTRY MARKETS

- Teknowledge derived its fiscal 1984 revenue from a wide range of industries including the following vertical market segments.
 - Discrete and process manufacturing.
 - Banking and finance.
 - Medical.
 - Utilities.
 - Telecommunications.
 - Transportation.
 - Federal, state, and local government.
- During fiscal 1985 the company will target additional cross-industry markets including the engineering/scientific and planning and analysis cross-industry segments.
 - Education and training professional services are targeted toward all Fortune 1000 companies and other professional services organizations. Custom expert systems development services are also targeted to Fortune 1000 companies as well as the federal government through the company's Federal Systems subsidiary.
 - System software products are targeted toward Fortune 1000 companies, large systems houses, and applications developers.

GEOGRAPHIC MARKETS

- Teknowledge derived its fiscal 1984 revenue from the following geographic markets:

U.S.	98%
Europe and Canada	<u>2</u>
	100%
- The company's subsidiary, Teknowledge Federal Systems Inc. is located in Thousand Oaks (CA).
- Teknowledge markets its products in Europe through Framentec, a wholly owned subsidiary of Framatome located in Monaco.

COMPUTER HARDWARE

- Teknowledge has the following computers installed at its headquarters for product development:
 - 2 DEC VAX 750s, operating under VMS.
 - 25 Xerox 1100s and 1108s, operating under InterLisp-D.
 - 40 IBM PCs, operating under PCDOs.
 - 1 Symbolics 3600, operating under Symbolics OS.

COMPANY PROFILE

TELECREDIT, INC.

6171 West Century Boulevard
Los Angeles, CA 90045-5310
(213) 410-4600

Lee A. Ault III, CEO

Wholly Owned Subsidiary of Equifax, Inc.

Total Employees: 1,016 (4/90)

Total Revenue, Fiscal Year End

4/30/90*: \$167,598,000

*Prior to acquisition

The Company

Telecredit, Inc., founded in 1961, provides electronic payment services that facilitate, process, and guarantee the financial exchange between buyers and sellers at the point of sale.

- Telecredit's primary payment services include check authorization and card processing, primarily in support of VISA and MasterCard credit cards. Telecredit also provides collection, enhancement, and account verification services.
- Payment services are provided to tens of thousands of establishments, including retail merchants, banks, credit unions, savings institutions, automobile dealers, auto rental companies, and hotels/motels.
- Effective September 30, 1989, Telecredit discontinued its Light Signatures, Inc. (LSI) computerized "signaturizing" services for consumer products and securities documents but continues to own and license patents on its technology for applications other than securities.

Telecredit operated as a public company until December 28, 1990 when Equifax, Inc. acquired Telecredit through a tax-free exchange of 2.8625 shares of Equifax common stock for each share of Telecredit stock.

- As a result of the acquisition, Telecredit now operates as a wholly owned subsidiary of Equifax.
- Telecredit's fiscal year end will change from April 30 to December 31 to conform to its new parent, and Telecredit's financials will be restated accordingly.

The information that follows reflects Telecredit's operations prior to the acquisition by Equifax.

Telecredit's revenue for the six months ending October 31, 1990 reached \$81.6 million, a 6% increase over \$77.1 million for the same period in 1989. Net income rose 11%, from \$12.9 million to over \$14.3 million.

Telecredit's fiscal 1990 revenue reached \$167.6 million, a 5% increase over fiscal 1989 revenue of \$159.4 million. A five-year financial summary follows:

**TELECREDIT, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	4/90	4/89	4/88	4/87	4/86
Revenue	\$167.6	\$159.4	\$143.2	\$125.3	\$102.5
• Percent Increase from previous year	5%	11%	14%	22%	20%
Income (loss) before taxes	\$45.5	\$40.6	\$(1.4)	\$18.4	\$10.1
• Percent Increase (decrease) from previous year	12%	*	(108%)	82%	74%
Net Income (loss)	\$28.5	\$24.9	\$(6.9)	\$9.5	\$5.3
• Percent Increase (decrease) from previous year	15%	*	(173%)	80%	56%
Earnings (loss) per share	\$2.57	\$2.26	\$(0.65)	\$0.88	\$0.51
• Percent Increase (decrease) from previous year	14%	*	(174%)	73%	55%

* Percent change not meaningful.

(a) Includes a \$25.2 million provision (\$20.8 million net of taxes, or \$1.96 per share) for costs associated with the restructuring of LSI.

Telecredit's fiscal 1990 information services revenue (Payment Services) reached \$159.6 million, a 6% increase over \$150.5 million for fiscal 1989. Pre-tax earnings rose from \$43.5 million in fiscal 1989 to \$44.1 million in fiscal 1990.

- Check authorization services revenue rose 8.5% during fiscal 1990 as the total dollar value of check purchase authorizations increased 15% to \$7.95 billion.

- The average discount rate charged to customers declined from 1.27% to 1.20% due to the continuing change in the mix of business. National and large district merchant account volumes, which have a lower average discount rate, accounted for a significant portion of the growth.
- Card processing revenue rose only 1% during fiscal 1990.
- Cardholder processing fees declined 8% due to the non-renewal of the contract with Payment Systems for Credit Unions, Inc. The average number of cardholder accounts processed during the year declined approximately 235,000, or 9%, which accounted for the decrease in cardholder revenue.
- Merchant service fees increased 19% to \$20.9 million due primarily to the growth in merchant volume processed from Independent Bankers Association of America member institutions. Merchant volume processed in fiscal 1990 was \$876 million, which was 17% higher than in fiscal 1989.

Key Products and Services

Ninety-five percent of Telecredit's fiscal 1990 revenue was derived from payment processing services. The remaining 5% was derived from light signature services, patent licensing, equipment rentals, and interest.

A three-year summary of source of revenue follows:

TELECREDIT, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

ITEM	FISCAL YEAR					
	4/90		4/89		4/88	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Payment Services						
• Check services	\$98.2	58%	\$90.5	57%	\$77.7	54%
• Card services	58.2	35%	57.6	36%	54.0	37%
• Other	3.2	2%	2.4	1%	2.0	1%
	\$159.6	95%	\$150.5	94%	\$133.7	92%
LSI	\$1.2	1%	\$4.2	3%	\$6.1	4%
Interest income	\$6.6	4%	\$4.1	3%	\$2.7	2%
Rental and other income	\$0.2	--	\$0.6	--	\$0.7	--
TOTAL	\$167.6	100%	\$159.4	100%	\$143.2	100%

Telecredit is principally engaged in providing payment services through a national on-line telecommunications network and computerized data bases.

- Authorization of check, credit card, and debit card transactions is available to customers by telephone, point-of-sale terminals, or electronic cash registers.
- Telecredit also provides card transaction processing services in connection with various credit and debit cards and collection services.
- More than 200 million check, credit card, and debit card transactions are processed annually for customers in the U.S. and Canada. The authorization network currently supports a variety of electronic terminals at the point of sale.

Check Services:

Basic check services for merchant subscribers are provided directly to national, regional, and local merchants through point-of-sale terminals, electronic cash registers, and by telephone.

- Telecredit's computers contain a data base developed from information provided by its subscribers than can be queried 24

hours a day, seven days a week. The information, indexed by driver's license number, includes check-cashing histories and is used in making check authorization decisions.

- Under its check purchase service, Telecredit agrees to purchase from subscribers at face value (up to a predetermined purchase limit) all returned checks it has approved. For some subscribers, Telecredit also purchases checks under a certain dollar amount without prior authorization for each check.
- Subscribers are billed monthly based on the volume and dollar amount of authorization inquiries.
- As part of its Basic Service, Telecredit rents point-of-sale terminals to certain merchants subscribing to Telecredit's check purchase service.
- During fiscal 1990, marketing for the basic check service continued to emphasize high volume accounts, including national retail chains, and electronic service delivery. Major department store chains remain a high priority target market for Telecredit.

Check purchase services are also provided by Telecredit through point-of-sale terminal programs sponsored by banks and other financial institutions and associations.

- Telecredit contracts with institutions to make its data base available and to provide the support necessary for the institution to offer check purchase services to their merchant depositors. The merchants obtain these services through terminals installed by a sponsoring institution, which may be linked to that institution's computer facility or directly to Telecredit's computers.
- Each institution is responsible for installing, operating, and maintaining the system. Queries go to the Telecredit data base without operator intervention.
- Other services provided to sponsoring institutions include returned dishonored check claims processing, telephone backup, computer operations assistance, training, consumer inquiry support, and compliance with the Fair Credit Reporting Act.
- As of June 30, 1990, Telecredit operated point-of-sale terminal programs in conjunction with 159 sponsoring institutions.

Telecredit's Check/Management Information Service provides check service subscribers with management information reports that analyze the efficiency and impact of electronic delivery of check authorization services at the point of sale.

Card Services:

Telecredit provides credit and debit card processing services in support of VISA and MasterCard credit cards. These services are provided nationally primarily to small to medium-sized financial institutions that issue credit and debit cards and (either directly or indirectly) to merchants that accept credit and debit cards.

For institutions that issue credit cards, Telecredit provides card issuer processing services, including embossing cards, posting and settling cardholder transactions, receiving and processing payments on cardholder accounts, preparing monthly statements to cardholders, providing cardholder security, and maintaining a largely automated customer service department that responds to inquiries from card issuers, merchants, and cardholders.

- The Distributed Card Accounts Processing System (DCAPS), introduced in 1987, enables certain credit card issuers to interface with Telecredit's data center via a microcomputer to access and update cardholder information.
 - DCAPS allows the card issuers to answer customer inquiries, input new cardholder accounts, change credit limits, and make other changes to cardholder accounts directly.
 - DCAPS is targeted to card issuers with less than 12,000 cardholders, such as small credit unions and banks.

For depository financial institutions that process transactions for merchant customers and for some merchants on a direct basis, Telecredit processes credit card "paper."

- Services provided include card authorization and clearing and settlement. Telecredit is compensated by retaining a part of the merchant discount applicable to certain transactions and by charging fees on each transaction processed. Telecredit plans to expand its merchant credit card processing services.

As of April 30, 1990, Telecredit was providing credit card processing services to 872 Independent Bankers Association of America (IBAA) member banks nationally, having approximately

534,000 cardholder accounts. During fiscal 1990, the agreement with IBAA Bancard, Inc. was extended through December 11, 1994.

During fiscal 1990, Telecredit added 36 members of the United States League of Savings Institutions through its contract with U.S. League Financial Services, Inc. (USLFS). As of April 30, 1990, Telecredit was providing card processing services to 152 U.S. League members having approximately 96,000 cardholder accounts. During fiscal 1990, the agreement with USLFS was extended through October 9, 1994.

Telecredit also provides card issuer and merchant processing services to Financial Transaction Systems, Inc. (FTSI), a Florida non-profit bank service organization with 75 member banks. During fiscal 1990, the agreement with FTSI was extended through October 31, 1992.

At the end of fiscal 1989, Payment Systems for Credit Unions (PSCU), an association of over 800 credit unions, did not renew its contract with Telecredit for processing services. Telecredit now has a contract with Card Services for Credit Unions (CSCU), an association of credit unions formed in January 1989 by various PSCU members desiring to continue processing with Telecredit.

- Telecredit's contract with CSCU runs through September 30, 1994.
- As of April 30, 1990, Telecredit was providing card issuer processing services to approximately 498 CSCU member credit unions representing approximately 1.345 million cardholder accounts.
- Revenues from the PSCU/CSCU contracts contributed about 14% (\$23.5 million) to Telecredit's total revenue for fiscal 1990, compared to 19% (\$30.3 million) of total revenue for fiscal 1989.

Telecredit's Enhancement Services, introduced in fiscal 1989, allow participating institutions to offer their cardholder accounts and other customers various services that encourage the use of their credit cards.

- The services, which are offered through a non-profit association organized by Telecredit, include travel accident insurance, credit card registration, discount shopping, travel discounts, and emergency cash.

- As of April 30, 1990, Telecredit was providing enhancements to 733 institutions, including IBAA, U.S. League, CSCU, and FTSI institutions.

Collection Services:

Telecredit offers collection services that assist subscribers in the collection of dishonored checks and uncollected receivables. Collection letters are generated by Telecredit's data processing equipment and are based on information transmitted by the creditor and information contained in Telecredit's own data base.

Telecredit also offers full collection services, primarily in California. The services are also provided for non-purchased checks as an enhancement to Telecredit's basic check purchase service.

Telecredit is developing customized services that combine its proprietary data base authorization system with collection services for certain target retailers, including mail order and home shopping check authorizations.

During fiscal 1990, Telecredit introduced ETV, an electronic lottery ticket validation system that offers low-cost winner validation for scratch-off instant lottery tickets through point-of-sale terminals at retail establishments. A patent application has been filed on the system. To date, no contracts have been signed for the system.

Industry Markets

Telecredit's fiscal 1990 revenue was derived primarily from the retail and financial services industries. The company's clients include retail merchants, supermarkets, automobile dealers, banks, savings and loans, credit unions, hotels, motels, airlines, car rental companies, and hospitals.

The company's target market for its check services is retailers and travel and entertainment companies.

The target market for card processing services is small to medium-sized financial institutions and trade associations that issue credit and debit cards, and retail merchants that accept credit and debit cards in payment for goods and services.

Geographic Markets

The majority of Telecredit's fiscal 1990 revenue was derived from the U.S. and the remainder was derived from Canada.

Most clients are in major metropolitan areas across the U.S., with emphasis in California and Florida.

Telecredit's principal offices are located in Los Angeles and Tampa. Additional sales/support offices are located in major metropolitan areas across the U.S.

Computer Hardware

Telecredit operates computer facilities in Los Angeles and Tampa as follows:

- Los Angeles has the following computers installed:
 - Tandem TXP (four processors) for on-line authorizations
 - 1 Amdahl 5860 for disaster recovery support
 - 1 Convergent Technologies Megaframe for collection services
- Tampa has the following computers installed:
 - Tandem XTP (five processors) for on-line authorizations
 - 1 Amdahl 470/V-8
 - 1 Amdahl 5880 for check services
 - PC-based systems to offload credit card transactions from the Tandem systems
 - PC-based LAN to offload check claims data entry



FINANCIAL UPDATE TO PROFILE DATED OCTOBER 1986

TELECREDIT, INC.
1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, Chairman and CEO
Public Corporation, OTC
Total Employees: 981 (Full-time),
162 (Part-time)
Total Revenue, Fiscal Year End
4/30/87: \$124,876,000
Computer Services Revenue:
\$115,976,000

TELECREDIT, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

Fiscal Year Item	4/87	4/86	4/85	4/84	4/83
Revenue	\$ 124,876	\$ 102,312	\$ 85,298	\$ 70,821	\$ 61,535
• Percent increase from previous year	22%	20%	20%	15%	5%
Income before taxes	\$ 18,363	\$ 10,067	\$ 5,792	\$ 9,218	\$ 7,569
• Percent increase (decrease) from previous year	82%	74%	(37%)	22%	32%
Net income	\$ 9,498	\$ 5,290	\$ 3,381	\$ 4,809	\$ 4,215
• Percent increase (decrease) from previous year	80%	56%	(30%)	14%	27%
Earnings per share (a)	\$ 0.88	\$ 0.51	\$ 0.33	\$ 0.50	\$ 0.46
• Percent increase (decrease) from previous year	73%	55%	(34%)	9%	18%

- (a) Restated to reflect a 2-for-1 stock split, effected as a 100% stock dividend in March 1987.
- On September 30, 1986, Telecredit sold substantially all of the assets of Honest Face Systems, its proprietary card-based check purchase service (operated primarily in Atlanta area supermarkets), to Computers Plus, Inc. for approximately \$1.9 million. The gain on the sale, after taxes, was \$514,000, or \$0.05 per share.

TELECREDIT, INC.

- During fiscal 1987 Telecredit wrote off its investment in and advances to KTI, a privately-held firm Telecredit had originally invested in during 1985. The write-off, after an income tax benefit of \$452,000, was \$331,000, or \$0.03 per share.

SOURCE OF REVENUE

- Ninety-three percent of Telecredit's fiscal 1987 revenue was derived from payment processing services. The remaining 7% was derived from light signature services, interest, equipment rentals, patent licensing, and gains on sales of assets.
- A three-year summary of source of revenue follows:

TELECREDIT, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)

Item \ Fiscal Year	4/87	4/86	4/85
Payment services			
• Check services (authorization)	\$ 63,643	\$ 51,361	\$ 45,458
• Card services	49,099	38,377	29,504
• Honest Face	1,550	4,067	4,319
• Other	<u>1,684</u>	<u>1,641</u>	<u>1,322</u>
	\$ 115,976	\$ 95,446	\$ 80,603
LSI	\$ 5,313	\$ 4,130	\$ 984
Rental and other income	\$ 723	\$ 767	\$ 826
Interest income	\$ 1,896	\$ 1,969	\$ 2,102
Gain on sale of assets	\$ 968	-	\$ 783
Total	\$ 124,876	\$ 102,321	\$ 85,298

- A three-year summary of pre-tax earnings by business area follows (\$ thousands):

TELECREDIT, INC.

	4/87	4/86	4/85
Pre-tax earnings (loss)			
Payment Services (a)	\$ 28,571	\$ 17,939	\$ 9,203
LSI	(10,393)	(7,772)	(4,194)
Nonrecurring items	<u>185</u>	<u>(100)</u>	<u>783</u>
Total	\$ 18,363	\$ 10,067	\$ 5,792

(a) Net of corporate expenses and other income.

- Telecredit's fiscal 1987 computer services revenue (Payment Services) reached \$116 million, a 22% increase of \$95.4 million for fiscal 1986.
 - Check services revenue rose 24% during fiscal 1987 as the total dollar value of check purchase authorizations increased 25% to \$4.14 billion.
 - Credit card processing revenue rose 28% during fiscal 1987. Cardholder processing fees rose 46% as the number of credit unions and credit union cardholder accounts processed by Telecredit increased by 22% and 35%, respectively, over the prior year. Merchant discount revenue was 16% higher during fiscal 1987.

COMPANY PROFILE

TELECREDIT, INC.

6171 West Century Boulevard
Los Angeles, CA 90045-5310
(213) 410-4600

Lee A. Ault III, Chairman and CEO
Public Corporation, OTC
Total Employees: 1,191
Total Revenue, Fiscal Year End
4/31/89: \$158,651,000

The Company

Telecredit, Inc., founded in 1961, provides electronic payment services that facilitate, process, and guarantee the financial exchange between buyers and sellers at the point of sale.

- Telecredit's primary payment services include check authorization and card processing, primarily in support of VISA and MasterCard credit cards. Telecredit also provides collection, enhancement, and account verification services.
- Payment services are provided to tens of thousands of establishments, including retail merchants, banks, credit unions, savings institutions, automobile dealers, auto rental companies, and hotels/motels.

During 1988, Telecredit made the decision to restructure the operations of Light Signatures, Inc. (LSI), Telecredit's computerized "signaturizing" service for consumer products and securities documents.

- LSI had revenue of \$6.1 million and a pre-tax operating loss of \$13.5 million for fiscal 1988, compared with revenue of \$5.3 million and pre-tax losses of \$10.4 million. The higher loss in fiscal 1988 was primarily due to expenses associated with the development and installation of a secure document processing system for the securities industry. Pre-tax losses for fiscal 1989 were \$2.3 million.
- During fiscal 1988, Telecredit also recorded a \$25.2 million provision for estimated costs to restructure LSI operations.
- In August 1988, LSI sold certain contracts and the licensing of its technology for the securities industry to National Computer Systems, Inc. for \$800,000.

- Effective September 30, 1989, LSI discontinued its light signature services business, but will continue to own and license patents on its technology for applications other than securities.

Telecredit's fiscal 1989 revenue reached \$158.7 million, an 11% increase over fiscal 1988 revenue of \$142.7 million. A five-year financial summary follows:

**TELECREDIT, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	4/89	4/88	4/87	4/86	4/85
Revenue	\$158,651	\$142,699	\$124,876	\$102,312	\$85,298
• Percent increase from previous year	11%	14%	22%	20%	20%
Income (loss) before taxes	\$40,594	\$(1,364)	\$18,363	\$10,067	\$5,792
• Percent increase (decrease) from previous year	*	(a)	82%	74%	(37%)
Net income (loss)	\$24,909	\$(6,931)	\$9,498	\$5,290	\$3,381
• Percent increase (decrease) from previous year	*	(a)	80%	56%	(30%)
Earnings (loss) per share	\$2.26	\$(0.65)	\$0.88	\$0.51	\$0.33
• Percent increase (decrease) from previous year	*	(a)	73%	55%	(34%)

* Percent change not meaningful.

- (a) Includes a \$25.2 million provision (\$20.8 million net of taxes, or \$1.96 per share) for costs associated with the restructuring of LSI.

Telecredit's fiscal 1989 information services revenue (Payment Services) reached \$149.7 million, a 12% increase over \$133.2 million for fiscal 1988. Pre-tax earnings rose from \$37.3 million in fiscal 1988 to \$42.9 million in fiscal 1989.

- Check authorization services revenue rose 17% during fiscal 1989 as the total dollar value of check purchase authorizations increased 27% to \$6.9 billion.

- The average discount rate charged to customers declined from 1.39% to 1.27%, primarily as a result of improved operating efficiencies.
- The change in the mix of the check business continued in 1989 as the national account volume, which has a lower average discount rate, accounted for a significant portion of growth.
- Card processing revenue rose 6% during fiscal 1989. Cardholder processing fees rose 16% as the number of financial institutions and cardholder accounts processed by Telecredit increased by 26% and 22%, respectively, over the prior year.
- Merchant discount revenue declined 10% as merchant volume decreased 21% to \$745.9 million in fiscal 1989, compared to \$941 million in fiscal 1988 and \$1.037 billion in fiscal 1987. The decline in merchant volume is due to the loss of Florida National Bank in April 1988.

Revenue for the three months ending July 31, 1989 reached \$41.0 million, a 12% increase over \$36.5 million for the same period in 1988. Net income rose 16%, from \$5.7 million to \$6.6 million.

Key Products and Services

Ninety-four percent of Telecredit's fiscal 1989 revenue was derived from payment processing services. The remaining 6% was derived from light signature services, patent licensing, equipment rentals, and interest.

A three-year summary of source of revenue follows:

TELECREDIT, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

ITEM	FISCAL YEAR					
	4/89		4/88		4/87	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Payment Services						
• Check services	\$90.5	57%	\$77.7	54%	\$63.6	51%
• Card services	56.8	36%	53.5	37%	49.1	39%
• Honest Face (a)	—	—	—	—	1.6	1%
• Other (b)	2.4	1%	2.0	1%	1.7	1%
	\$149.7	94%	\$133.2	92%	\$116.0	92%
LSI	\$4.2	3%	\$6.1	4%	\$5.3	4%
Interest income	\$4.1	3%	\$2.7	2%	\$1.9	2%
Rental and other income	\$0.6	—	\$0.7	—	\$1.7	2%
TOTAL	\$158.6	100%	\$142.7	100%	\$124.9	100%

(a) *Honest Face Systems, Telecredit's proprietary card-based check purchase service, was sold in September 1986.*

Telecredit is principally engaged in providing payment services through a national on-line telecommunications network and computerized data bases.

- Authorization of check, credit card, and debit card transactions is available to customers by telephone, point-of-sale terminals, or electronic cash registers.
- Telecredit also provides card transaction processing services in connection with various credit and debit cards and collection services.
- More than 200 million check, credit card, and debit card transactions are processed annually for customers in the U.S. and Canada. The authorization network currently supports a variety of electronic terminals at the point of sale.

Check Services:

Basic check services for merchant subscribers are provided directly to national, regional, and local merchants through point-of-sale terminals, electronic cash registers, and by telephone..

- Telecredit's computers contain a data base developed from information provided by its subscribers than can be queried 24 hours a day, seven days a week. The information, indexed by driver's license number, includes check-cashing histories and is used in making check authorization decisions.
- Under its check purchase service, Telecredit agrees to purchase from subscribers at face value (up to a predetermined purchase limit) all returned checks it has approved. For some subscribers, Telecredit also purchases checks under a certain dollar amount without prior authorization for each check.
- Subscribers are billed monthly based on the volume and dollar amount of authorization inquiries.
- As part of its Basic Service, Telecredit rents point-of-sale terminals to certain merchants subscribing to Telecredit's check purchase service.
- During fiscal 1989, marketing for the basic check service emphasized high volume accounts, including national retail chains, and electronic service delivery. Major department store chains remain a high priority target market for Telecredit.

Check purchase services are also provided by Telecredit through point-of-sale terminal programs sponsored by banks and other financial institutions and associations.

- Telecredit contracts with institutions to make its data base available and to provide the support necessary for the institution to offer check purchase services to their merchant depositors. The merchants obtain these services through terminals installed by a sponsoring institution, which may be linked to that institution's computer facility or directly to Telecredit's computers.
- Each institution is responsible for installing, operating, and maintaining the system. Queries go to the Telecredit data base without operator intervention.
- Other services provided to sponsoring institutions include returned dishonored check claims processing, telephone

backup, computer operations assistance, training, consumer inquiry support, and compliance with the Fair Credit Reporting Act.

- As of June 30, 1989, Telecredit operated point-of-sale terminal programs in conjunction with 157 sponsoring institutions.
 - Clients include Bank of America, First Chicago, Security Pacific Bank, Mellon Bank, First Interstate, and Manufacturers Hanover Trust.

Telecredit's Check/Management Information Service provides check service subscribers with management information reports that analyze the efficiency and impact of electronic delivery of check authorization services at the point of sale.

Card Services:

Telecredit provides credit and debit card processing services in support of VISA and MasterCard credit cards. These services are provided primarily to small to medium-sized financial institutions that issue credit and debit cards and (either directly or indirectly) to merchants that accept credit and debit cards.

For institutions that issue credit cards, Telecredit provides card issuer processing services, including embossing cards, posting and settling cardholder transactions, receiving and processing payments on cardholder accounts, preparing monthly statements to cardholders, providing cardholder security, and maintaining a largely automated customer service department that responds to inquiries from card issuers, merchants, and cardholders.

- The Distributed Card Accounts Processing System (DCAPS), introduced in 1987, enables certain credit card issuers to interface with Telecredit's data center via a microcomputer to access and update cardholder information.
 - DCAPS allows the card issuers to answer customer inquiries, input new cardholder accounts, change credit limits, and make other changes to cardholder accounts directly.
 - DCAPS is targeted to card issuers with less than 12,000 cardholders, such as small credit unions and banks.

For depository financial institutions that process transactions for merchant customers and for some merchants on a direct basis, Telecredit processes credit card "paper".

- Services provided include card authorization and clearing and settlement. Telecredit is compensated by retaining a part of the merchant discount applicable to certain transactions and by charging fees on each transaction processed. Telecredit plans to expand its merchant credit card processing services.

Telecredit's point-of-sale terminal programs to financial institutions have included additional card services for debit card transaction processing, credit card (including travel and entertainment card) authorization, and the capturing of card transaction information at the point of sale. Clients include First Interstate Bank of Arizona and First Union National Bank of Florida. These point-of-sale programs will be phased out during the latter half of fiscal 1990.

As of April 30, 1989, Telecredit provided card processing services to 1,740 banks, credit unions, and savings institutions representing nearly 2.9 million individual VISA and MasterCard accounts. This represents an increase of 362 institutions and an addition of more than 500,000 during fiscal 1989.

- As of August 31, 1989 Telecredit had contracted with 691 Independent Bankers Association of America (IBAA) member institutions, of which 261 were signed during fiscal 1989. In addition to the processing of cardholder accounts, Telecredit is adding approximately 500 new merchant processing accounts monthly from IBAA member banks.
- During fiscal 1989, Telecredit added 61 members of the United States League of Savings Institutions through its contract with U.S. League Financial Services, Inc. As of April 30, 1989, Telecredit was processing for 116 U.S. League members having approximately 60,000 cardholders.
- Telecredit also provides card issuer and merchant processing services to Financial Transaction Systems, Inc., a Florida non-profit bank service organization with 70 member banks.

During fiscal 1989, Payment Systems for Credit Unions, Inc. (PSCU), an association of 840 credit unions for which Telecredit has provided credit card processing service since the association was founded in 1978, notified Telecredit that it would not be renewing its contract with Telecredit when it expires in September 1989.

- Telecredit has entered into an agreement with Card Services for Credit Unions (CSCU), a new association formed by some members of PSCU, to provide credit card processing services

beginning October 1, 1989. As of June 30, 1989, 460 credit unions, representing approximately 55% of PCSU credit union cardholder accounts, committed to continue processing their credit card transactions through Telecredit.

- Revenues from PCSU credit union members represented approximately 19% of Telecredit's total revenue during fiscal 1989. The loss of a portion of this client base will impact operating results subsequent to September 1989.

Telecredit's Enhancement Services, introduced in fiscal 1989, allow participating institutions to offer their cardholder accounts and other customers various services that encourage the use of their credit cards.

- The services, which are offered through a non-profit association organized by Telecredit, include travel accident insurance, credit card registration, discount shopping, travel discounts, and emergency cash.
- As of April 30, 1989, 352 institutions had enrolled in the Enhancement Services program, in IBAA and US. League institutions.

Collection Services:

Telecredit offers collection services that assist subscribers in the collection of dishonored checks and uncollected receivables. Collection letters are generated by Telecredit's data processing equipment and are based on information transmitted by the creditor and information contained in Telecredit's own data base.

Telecredit also offers full collection services, primarily in California. The services are also provided for non-purchased checks as an enhancement to Telecredit's basic check purchase service.

Telecredit is developing customized services that combine its proprietary data base authorization system with collection services for certain target retailers, including mail order and home shopping check authorizations.

Industry Markets

Telecredit's fiscal 1989 revenue was derived primarily from the retail and financial services industries. The company's clients include retail merchants, supermarkets, automobile dealers, banks, savings and loans, credit unions, hotels, motels, airlines, car rental companies, and hospitals.

The company's target market for its check services is retailers and travel and entertainment companies.

The target market for card processing services is small to medium-sized financial institutions and trade associations that issue credit and debit cards, and retail merchants that accept credit and debit cards in payment for goods and services.

Geographic Markets

The majority of Telecredit's fiscal 1989 revenue was derived from the U.S. and the remainder was derived from Canada.

The heaviest concentration of clients are in major metropolitan areas across the U.S., with emphasis in California and Florida.

Telecredit's principal offices are located in Los Angeles and Tampa. Additional sales/support offices are located in major metropolitan areas across the U.S.

Computer Hardware

Telecredit operates computer facilities in Los Angeles and Tampa as follows:

- Los Angeles has the following computers installed:
 - Tandem TXP (four processors), for on-line authorizations
 - 1 Amdahl 5860, for disaster recovery support
 - 1 Convergent Technologies Megaframe, for collection services
- Tampa has the following computers installed:
 - Tandem XTP (five processors), for on-line authorizations
 - 1 Amdahl 470/V-8
 - 1 Amdahl 5860, for check services

COMPANY PROFILE

TELECREDIT, INC.
1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, Chairman and CEO
Public Corporation, OTC
Total Employees: 888 (Full-Time)
Total Revenue, Fiscal Year End
4/30/86: \$102,312,000
Computer Services Revenue:
\$95,446,000

THE COMPANY

- Telecredit, Inc., founded in 1961, provides on-line payment services that facilitate the financial exchange between buyers and sellers at the point of sale.
 - Principal services include check authorization, credit and debit card processing, a consumer card service (Honest Face™), and computerized letter collection services.
 - Through Light Signatures, Inc. (LSI) Telecredit also provides computerized "signaturizing" of consumer products.
- Telecredit's fiscal 1986 revenue reached \$102.3 million, a 20% increase over fiscal 1985 revenue of \$85.3 million. Net income rose 56% from \$3.4 million in fiscal 1985 to \$5.3 million in fiscal 1986. A five-year financial summary follows:

TELECREDIT, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	4/86	4/85	4/84	4/83	4/82
Revenue	\$ 102,312	\$ 85,298	\$ 70,821	\$ 61,535	\$ 58,445
• Percent increase from previous year	20%	20%	15%	5%	27%
Income before taxes	\$ 10,067	\$ 5,792	\$ 9,218	\$ 7,569	\$ 5,751
• Percent increase (decrease) from previous year	74%	(37%)	22%	32%	14%
Net income	\$ 5,290	\$ 3,381(a)	\$ 4,809	\$ 4,215	\$ 3,330
• Percent increase (decrease) from previous year	56%	(30%)	14%	27%	21%
Earnings per share	\$ 1.02	\$ 0.66	\$ 1.00	\$ 0.91	\$ 0.77
• Percent increase (decrease) from previous year	55%	(34%)	10%	18%	4%

(a) Includes a gain of \$382,000, net of taxes, realized from the sale of Telecredit's equity position in DMC Systems, Inc. to Equatorial Communications Company in June 1984.

- Telecredit's fiscal 1986 computer services revenue (Payment Services) reached \$95.4 million, an 18% increase over \$80.6 million for fiscal 1985.
 - Check services revenue rose 13% during fiscal 1986 as the total dollar value of check purchase authorizations increased 12% to \$3.3 billion. Checks approved for purchase from regional and third-party bank merchants increased by 17% and 38%, respectively, while checks approved for purchase from large volume national accounts declined 8%.
 - Credit card processing revenue rose 30% during fiscal 1986. Cardholder processing fees rose 39% as the number of credit unions and the number of individual accounts processed by Telecredit increased by 32% and 43%, respectively, over the prior year. Merchant discount revenue was 14% higher during fiscal 1986.
 - Honest Face revenue decreased 6% during 1986 due to a decline in transaction fee revenue, which was due to a lower number of stores using the service along with a lower usage per store.

TELECREDIT, INC.

- A three-year summary of source of revenue follows:

TELECREDIT, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)

ITEM \ FISCAL YEAR	4/86	4/85	4/84
Payment Services			
• Check services (authorization)	\$ 51,361	\$ 45,458	\$ 38,574
• Card services	38,377	29,504	24,199
• Honest Face	4,067	4,319	3,760
• Other	<u>1,641</u>	<u>1,322</u>	<u>1,281</u>
	\$ 95,446	\$ 80,603	\$ 67,814
LSI	\$ 4,130	\$ 984	\$ 316
Rental and other income	\$ 767	\$ 826	\$ 811
Interest income	\$ 1,969	\$ 2,102	\$ 1,880
Gain on sale of DMC Systems	-	\$ 783	-
Total	\$ 102,321	\$ 85,298	\$ 70,821

- A three-year summary of pre-tax earnings by business area follows (\$ thousands):

ITEM \ FISCAL YEAR	4/86	4/85	4/84
Pre-tax earnings (loss)			
Payment Services (a)	\$ 17,839	\$ 9,203	\$ 10,140
LSI	(7,772)	(4,194)	(922)
DMC Systems Sale	<u>-</u>	<u>783</u>	<u>-</u>
Total	\$ 10,067	\$ 5,792	\$ 9,218

(a) Net of corporate expenses and other income.

- Payment Services research and development expenditures were \$372,000 in fiscal 1986 compared to \$544,000 in fiscal 1985. Research and development expenses by LSI were approximately \$3.9 million in fiscal 1986 compared with \$1.1 million in fiscal 1985.
- During April 1986 Telecredit announced the signing of an agreement for the sale of Honest Face, the company's card-based check acceptance service provided primarily to Atlanta supermarkets. The prospective acquiror was

TELECREDIT, INC.

unable to obtain necessary funding prior to the agreement expiration date. Telecredit continues to operate this business.

- On November 1, 1985, Telecredit acquired approximately 31% of the equity of Kennedy Technology, Inc. (KTI) for \$800,000.
 - KTI has developed a secure document data capture terminal for the LSI securities program and also provides contract hardware engineering development services.
- During 1981 and 1982 Telecredit acquired 22% (384,267 shares of common stock) of DMC Systems, Inc. for a total cost of \$1,014,000.
 - DMC manufactures terminals and microcomputer systems, including the point-of-sale terminals used by Telecredit.
 - Due to continuing operating losses and the level of sales of DMC, Telecredit wrote off its remaining investment in DMC during fiscal 1983.
 - In June 1984 DMC was acquired by Equatorial Communications Company (ECC) for \$2 million in cash and ECC common stock. In the sale Telecredit received 35,798 shares of ECC common stock worth approximately \$783,000. In August 1984 Telecredit sold 26,848 of these shares for \$631,000. In April 1986 Telecredit liquidated its remaining ECC shares for a total consideration of \$74,000.
- Revenue for the three months ending July 31, 1986 was \$27.8 million, a 22% increase over \$22.7 million for the same period in 1985. Net income for the period rose 61% from \$870,000 in 1985 to \$1.4 million in 1986.
- As of April 30, 1986, Telecredit had 888 full-time and 139 part-time employees.
- Major competitors for check services include TeleCheck (McDonnell Douglas Payment Systems Company), Compu-U-Check, Inc., and SBS Associates Inc. In card processing services, Telecredit competes with First Data Resources (American Express), major financial institutions, and associations owned by member banks.

KEY PRODUCTS AND SERVICES

- Ninety-three percent of Telecredit's fiscal 1986 revenue was derived from payment processing services. The remaining 7% was derived from light signature services, interest, equipment rentals, and patent licensing.
- Telecredit is principally engaged in providing payment services through a national on-line telecommunications network and computerized data bases.

TELECREDIT, INC.

- Authorization of check, credit card, and debit card transactions is available to customers either by telephone, point-of-sale terminals, or electronic cash registers.
 - Telecredit also provides card transaction processing services in connection with various credit and debit cards and collection services.
 - Customers include consumers, financial institutions, retail merchants, automobile dealers, automobile rental firms, airlines, supermarkets, hospitals, and hotels.
 - More than 100 million check, credit, and debit card transactions are processed annually. The authorization network currently supports a variety of electronic terminals at the point of sale, with more than 25,000 terminals linked to Telecredit. More than 75% of authorization transactions are delivered through electronic terminals, with the balance derived from voice inquiries made through toll-free telephone lines to Telecredit's authorization operators.
- Check (authorization) services provided by Telecredit include the following:
 - The Basic Service to merchant subscribers is provided directly to national, regional, and local merchants through telephone, point-of-sale terminals, and electronic cash registers. Check purchase is currently the most significant of the authorization services offered.
 - Telecredit's computers contain a data base developed from information provided by its subscribers that can be queried 24 hours a day, seven days a week. The information, indexed by driver's license numbers, includes check-cashing histories and is used in making check authorization decisions.
 - Telecredit agrees to purchase from subscribers at face value (or a lesser amount for which authorization has been provided) all returned checks it has approved. Telecredit does not normally agree to purchase checks if the face value exceeds \$2,000.
 - Subscribers are billed monthly based on the volume and dollar amount of authorization inquiries.
 - As part of its Basic Service, Telecredit rents its own point-of-sale terminals to merchants principally outside of California.
 - Many of the terminals were designed jointly by Telecredit and DMC and were manufactured by DMC. Telecredit also rents terminals made by other manufacturers including GTE and Omron.
 - Telecredit has placed over 5,000 terminals with merchants subscribing to the check purchase service.

TELECREDIT, INC.

- During fiscal 1986 the marketing emphasis for the Basic Service was placed on regional and local merchant accounts and programs sponsored by banks and other financial institutions. Marketing to high volume national accounts, where overall past results have not met expectations, continue on a selective basis with pricing policies designed to ensure profitability.
- At the beginning of fiscal 1987 Telecredit signed The Gap, Inc. (more than 600 stores) and K-Mart Corporation (for more than 500 stores) to its check purchase services.
- Check authorization services are also provided by Telecredit through point-of-sale terminal programs sponsored by banks and other financial institutions and associations.
 - Telecredit contracts with institutions to make its data base available and to provide the support necessary for the institutions to offer check authorization services to their merchant depositors. The merchants obtain these services through a terminal installed by a sponsoring institution and linked to that institution's computer facility or directly to Telecredit's computers.
 - Each institution is responsible for installing, operating, and maintaining its system. Queries go to the Telecredit data base without operator intervention.
 - Other Telecredit services include returned dishonored check claims processing, telephone backup, computer operations assistance, consumer inquiry support, and Fair Credit Act reporting.
 - Clients include Bank of America, First Chicago, Security Pacific Bank, Mellon Bank, First Interstate, and Manufacturers Hanover Trust.
 - On June 10, 1986 Telecredit operated point-of-sale terminal programs in conjunction with more than 90 institutions using approximately 8,400 point-of-sale terminals.
- During fiscal 1984 Telecredit introduced the Check/Management Information Service (C/MIS). For an additional fee, Telecredit subscribers can receive management information reports that analyze the efficiency and impact of electronic delivery of check authorization services at the point of sale.
- Honest Face is a proprietary card-based check authorization service that provides consumers with ready check acceptance at Atlanta-area grocery and other retail stores.

TELECREDIT, INC.

- Honest Face was acquired by Telecredit from the First National Bank of Atlanta in July 1981 for approximately \$3.1 million.
- The Honest Face system uses a plastic card in conjunction with customer-operated electronic terminals that are owned by Telecredit and linked to a central authorization center to approve checks written by cardholders at the point of sale.
- Currently, there are approximately 300,000 consumers who have been issued Honest Face cards. Approximately 250 Atlanta-area grocery stores and several hundred other retail outlets use the Honest Face system. This compares with 400,000 consumers who held Honest Face cards and 275 grocery stores that used the service a year ago.
- Revenues are realized primarily from cardholder fees, terminal rentals, and merchant transaction fees. In March 1984 the annual consumer cardholder fee was raised from \$5.00 to \$7.50. Cardholders initially issued their Honest Face cards by the First National Bank of Atlanta are charged an annual fee of \$5.00.
- Telecredit provides credit and debit card processing services in connection with MasterCard, VISA, and American Express transactions. These services are provided to small to medium size financial institutions that issue credit and debit cards and to merchants that accept credit and debit cards.
 - For institutions that issue credit cards, Telecredit provides card issuer processing services including embossing cards, posting and settling cardholder transactions, receiving and processing payments on cardholder accounts, preparing monthly statements to cardholders, providing cardholder security, and maintaining a customer service department that responds to inquiries from card issuers, merchants, and cardholders.
 - During fiscal 1986 Telecredit introduced DCAPS, a proprietary distributed card processing system for IBM and compatible microcomputers. DCAPS permits card issues to interface with Telecredit's data center for customer inquiries, input of new cardholder accounts, to increase card limits, and make other changes to cardholder accounts.
 - For depository financial institutions that process transactions for merchant customers and for some merchants on a direct basis, Telecredit processes credit card "paper." Services provided include authorization (indicating that the card is valid and sufficient funds are available) and clearing and settlement (paying the merchants for the card transaction and collecting from the cardholder's financial institution). Telecredit is compensated by retaining a part of the merchant discount applicable to certain transactions and by charging fees on each transaction processed.

TELECREDIT, INC.

- Telecredit provides merchant and card issuer processing services nationally with heavy merchant concentration in Florida. The card-processing services are provided primarily to banks, credit unions, savings and loan associations, and national merchants. Clients also include merchants whose card transactions are processed by Telecredit through an arrangement with the merchant's bank.
- As processor for Payment Systems for Credit Unions (PSCU), a trade association based in Florida, Telecredit considers itself a leader in providing card services to credit unions. The card services furnished to credit unions are a significant source of revenue.
 - Currently, Telecredit provides transaction processing services to more than 573 credit unions nationally who have approximately 1.2 million cardholders, as compared to 435 credit unions representing 825,000 individual accounts a year ago.
 - Telecredit signed a new four-year agreement with PSCU in October 1985. Services to PSCU members represented approximately 14% of fiscal 1986 revenue.
- Telecredit continues to perform services for Financial Transaction Systems, Inc. (FTSI), a Florida non-profit bank service corporation with 66 member banks. These services represent less than 10% of fiscal 1986 revenue.
- In December 1985 Telecredit signed an agreement with the 7,500 member Independent Bankers Association of America (IBAA) to provide credit card processing and other payment services to subscribing IBAA member banks. At June 30, 1986, 63 member banks had signed agreements, and an additional 141 member banks have enrolled but had not signed agreements for Telecredit's services.
- Telecredit has expanded its financial institution point-of-sale terminal program by offering additional services provided through DMC terminals, including debit card transaction processing, credit card authorization, the capturing of card transaction information at the point of sale, and travel and entertainment card authorization.
- First Interstate Bank of Arizona (FIAZ) has purchased 400 DMC terminals and has ordered an additional 300 terminals from Telecredit.
 - As of April 30, 1986, FIAZ had placed 350 of these terminals at convenience stores in the Phoenix (AZ) area.
 - Store customers may use their FIAZ or Valley National Bank ATM cards to purchase goods and services and receive cash in excess of the amount of purchase.

TELECREDIT, INC.

- First Union National Bank of Florida has purchased 500 terminals from Telecredit.
 - As of April 30, 1986, First Union had placed 350 terminals at retail merchants in the Jacksonville area.
 - Services provided to these merchants include the processing of HONOR ATM card transactions, credit card (including travel and entertainment card) authorizations, the capturing of card transaction information at the point of sale, and check purchase.
- Telecredit offers a collection letter service that assists subscribers in the collection of dishonored checks and uncollected receivables. Collection letters are generated by Telecredit's data processing equipment and are based on information transmitted by the creditor and information contained in Telecredit's own data base. The collection letter service is provided primarily in California, and revenues from this service have not been significant to date.
- Planned research and development projects for fiscal 1987 in the area of payment services include the following:
 - Development of a distributed authorization processing network for check purchase, credit card, and debit card transactions.
 - Development of a dial-up automated teller machine network for small financial institutions in which Telecredit would perform a clearing function.
 - Development of a fully automated call system which will feature auto dialing of debtors as outlined in Telecredit's telephone scheduling patent.
 - Development of firmware to convert point-of-sale terminals manufactured by others to operate in Telecredit's draft capture mode.
 - Development of a computer-controlled "gang" switch which will switch dedicated communication line traffic between Telecredit's Tampa and Los Angeles facilities under emergency conditions or for load balancing.
- Through Light Signatures, Inc. (LSI), Telecredit provides merchandise validation and information services.
 - LSI has developed a computer-based system that combines the randomness of nature with light measurement technology to detect counterfeit products and documents such as jeans, records, identification cards, credit cards, checks, stock certificates, and other items. The technology uses a computer-controlled beam of light that passes through a label or document to establish a counterfeit-proof "fingerprint" which

is represented in encrypted digital form on the label or document, on a magnetic stripe, or in computer memory.

- LSI's authentication system can also be used to control product diversion and provide information for marketing, inventory control, and licensee control.
- LSI has contracted with several leading manufacturers and licensors of consumer products, including Levi Strauss & Co., Lee Jeans, Chrysalis Records, Karl-Lorimar Video, Giorgio Perfumes, Prince tennis rackets, and MacGregor and Spaulding athletic wear to protect their products from counterfeiting and other commercial abuse by "signaturizing" their labels and/or packaging. Revenues from Levi Strauss & Co. currently account for approximately 76% of Light Signature revenue.
- LSI is developing a secure document processing system which protects stocks, bonds, and other securities from risk of counterfeiting and alteration.
- Other noncomputer service revenue includes income from property leases, patent licensing, and interest income.
 - Excluding patents owned by LSI, Telecredit owns 16 patents pertaining to a number of systems and devices, including point-of-sale terminals, systems for controlling the use of magnetically encoded cards, credit authorization systems, and telephone scheduling systems. Since January 1974, Telecredit has entered into 20 patent licensing agreements with major U.S. and foreign manufacturers.
 - Revenues from such licenses are not currently significant. Licensing fees of \$46,000, \$151,000, and \$45,000 were reported as revenues in fiscal 1984, 1985, and 1986, respectively.
 - Licensees include IBM, NCR, Burroughs, Docutel, Diebold, Concord Computing, Texas Instruments, CIT (France), ASEA (Sweden), ARDAC (Sweden), Fujitsu (Japan), Electronique Marcel Dassault (France), Datasab (Sweden), TeleCheck, Tymshare, General Instrument, TRW, TBS, and others.

INDUSTRY MARKETS

- Telecredit's fiscal 1986 computer services revenue was derived primarily from the retail industry. The company's clients include retail merchants, automobile dealers, supermarkets, hospitals, hotels, motels, airlines, car rental companies, financial institutions, credit unions, and consumers.
- The company's target market for its check purchase (authorization) services is retailers and travel and entertainment companies.

TELECREDIT, INC.

- The target market for the Honest Face program is the metropolitan Atlanta-area retail industry.
- The target market for card-processing services is small- to medium-sized financial institutions that issue credit and debit cards and retail merchants that accept credit and debit cards in payment for goods and services.

GEOGRAPHIC MARKETS

- Virtually 100% of Telecredit's fiscal 1986 revenue was derived from the U.S.
 - The heaviest concentration of clients are in major metropolitan areas across the U.S., with emphasis in California and Florida.
- Telecredit has principal branch offices in Atlanta and Tampa and additional sales/support offices in most major metropolitan areas.
- Light Signatures, Inc. is headquartered in Los Angeles.

COMPUTER HARDWARE AND SOFTWARE

- Telecredit operates computer facilities in Los Angeles, Tampa, and Atlanta as follows:
 - Los Angeles.
 - Tandem NonStop (six processors), operating under ACI Net and Tandem software, for on-line authorizations.
 - 1 IBM 4341.
 - 1 Convergent Technologies Megaframe for collection services.
 - Tampa.
 - Tandem NonStop (eight processors), operating under ACI Net and Tandem software, for on-line authorizations.
 - 1 Amdahl 470/V-8.
 - 1 IBM 4341.
 - 1 Convergent Technologies Megaframe for check services.
 - Atlanta.
 - 2 IBM System/7s.
- LSI uses an IBM Series 1 (augmented by the IBM 4341 in Los Angeles) and five Signa One and three Signa Two production machines.



FINANCIAL UPDATE TO PROFILE DATED OCTOBER 1984

TELECREDIT, INC.

1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, Chairman and CEO

Public Corporation, OTC

Total Employees: 965

Total Revenue, Fiscal Year End

4/30/85: \$85,298,000

Computer Services Revenue:

\$80,603,000

TELECREDIT, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	4/85	4/84	4/83	4/82	4/81
Revenue	\$ 85,298	\$ 70,821	\$ 61,535	\$ 58,445	\$ 46,004
• Percent increase from previous year	20%	15%	5%	27%	19%
Income before taxes	\$ 5,792	\$ 9,218	\$ 7,569	\$ 5,751	\$ 5,058
• Percent increase (decrease) from previous year	(37%)	22%	32%	14%	400%
Net income	\$ 3,381(a)	\$ 4,809	\$ 4,215	\$ 3,330	\$ 2,747
• Percent increase (decrease) from previous year	(30%)	14%	27%	21%	271%
Earnings per share	\$ 0.66	\$ 1.00	\$ 0.91	\$ 0.77	\$ 0.74
• Percent increase (decrease) from previous year	(34%)	10%	18%	4%	252%

- (a) Includes a gain of \$382,000, net of taxes, realized from the sale of Telecredit's equity position in DMC Systems, Inc. to Equatorial Communications Company in June 1984.

- Telecredit management attributes net income declines to the following:
 - A 31% decrease in operating earnings from check purchase services in fiscal 1985, due to higher net claims and lower discount rates that were not offset by corresponding reductions in expenses.

TELECREDIT, INC.

- Systems changes to the authorization and claims processing systems were made to accommodate the company's new high-volume national accounts business, including the changing, loosening, or eliminating of certain controls. The result was a significant increase in claims due to an abnormally high level of fraudulent checks and a corresponding reduction in collections on dishonored checks.
- In addition, expenses rose disproportionately to revenues in some areas and there was an imbalance between the revenue generated, the risk assumed, and the expenses incurred on certain large accounts.
- Higher than anticipated losses at Light Signatures, Inc. due to increased research and development expenses and a ten-month delay in the delivery of Signa Two high speed processing equipment.

SOURCE OF REVENUE

- A three-year summary of Telecredit's source of revenue follows (\$ thousands):

ITEM \ FISCAL YEAR	4/85	4/84	4/83
Payment services processing			
• Check purchase (authorization)	\$ 45,458	\$ 38,574	\$ 33,242
• Honest Face	4,319	3,760	3,229
• Credit and debit card	29,504	24,199	20,646
• Other	<u>1,322</u>	<u>1,281</u>	<u>1,512</u>
	\$ 80,603	\$ 67,814	\$ 58,629
• Percent increase from previous year	19%	16%	5%
Light Signature Services	\$ 984	\$ 316	-
Rental and other income	\$ 826	\$ 811	\$ 584
Interest income	\$ 2,102	\$ 1,880	\$ 2,322
Gain on sale of DMC Systems	\$ 783	\$ -	-
Total	\$ 85,298	\$ 70,827	\$ 61,535

TELECREDIT, INC.

- A three-year summary of pre-tax earnings by business area follows (\$ thousands):

	<u>4/85</u>	<u>4/84</u>	<u>4/83</u>
Pre-tax earnings (losses)			
Payment services	\$ 8,997	\$10,140	\$8,398
Light Signature Services	(3,988)	(922)	-
DMC Systems	<u>783</u>	<u>-</u>	<u>(829)</u>
Total	\$ 5,792	\$9,218	\$7,569



COMPANY HIGHLIGHT

TELECREDIT, INC.
1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, Chairman and CEO
Louis P. Buglioli, President
Public Corporation, OTC
Total Employees: 875
Total Revenue, Fiscal Year End
4/30/84: \$70,827,000
Computer Services Revenue:
\$67,814,000

THE COMPANY

- Telecredit, Inc., founded in 1961, provides on-line payment services that facilitate the financial exchange between buyers and sellers at the point of sale.
 - Principal services include check authorization, card processing, a consumer card service (Honest FaceTM), and computerized letter collection services.
 - Other services include computerized "signaturizing" of consumer products and patent licensing.
- Telecredit's fiscal 1984 revenue reached \$70.8 million, a 15% increase over fiscal 1983 revenue of \$61.5 million. Net income rose 14%, from \$4.2 million. Net income rose 14%, from \$4.2 million in fiscal 1983, to \$4.8 million in fiscal 1984. A five-year financial summary follows:

TELECREDIT, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	4/84	4/83	4/82	4/81	4/80
Revenue	\$ 70,827	\$ 61,535	\$ 58,445	\$ 46,004	\$ 38,582
• Percent increase from previous year	15%	5%	27%	19%	21%
Income before taxes	\$ 9,218	\$ 7,569	\$ 5,751	\$ 5,058	\$ 1,011
• Percent increase (decrease) from previous year	22%	32%	14%	400%	(61%)
Net income	\$ 4,809	\$ 4,215	\$ 3,330	\$ 2,747	\$ 741
• Percent increase (decrease) from previous year	14%	27%	21%	271%	(50%)
Earnings per share	\$ 1.00	\$ 0.91	\$ 0.77	\$ 0.74	\$ 0.21
• Percent increase (decrease) from previous year	10%	18%	4%	252%	(49%)

- On January 4, 1984, Telecredit acquired Light Signatures, Inc. (LSI) for a total purchase price of approximately \$14.9 million.
 - In the merger of LSI into a new wholly owned subsidiary, Telecredit issued to the shareholders of LSI 446,250 shares of its common stock and made cash payments of \$5,117,350. Previously, Telecredit had owned a substantial minority position in LSI, for which it paid \$4,255,000.
 - LSI has developed a computer-based system to authenticate products and documents and protect against counterfeiting.
 - Prior to the acquisition, LSI was in the development stage and had not generated significant revenues. As of December 31, 1983, LSI had an accumulated deficit of approximately \$3.7 million.
 - LSI had approximately 35 employees at the time of the acquisition.
- During 1981 and 1982 Telecredit acquired 22% (384,267 shares of common stock) of DMC Systems, Inc. for a total cost of \$1,014,000.
 - DMC manufactures terminals and microcomputer systems, including the point-of-sale terminals used by Telecredit.

TELECREDIT, INC.

- Due to continuing operating losses and the level of sales of DMC, Telecredit wrote off its remaining investment in DMC during fiscal 1983.
- In June 1984 DMC shareholders sold all of the outstanding common stock of DMC to Equatorial Communications Company (ECC) for \$2 million in cash and ECC common stock.
 - In the sale Telecredit received 35,798 shares of ECC common stock worth approximately \$780,000. In August 1984 Telecredit sold 26,848 of these shares for \$631,000 and retained 8,950 shares currently valued at approximately \$152,000.
 - During fiscal 1984, 1983, and 1982, Telecredit purchased approximately \$931,000, \$1.7 million, and \$992,000 of point-of-sale merchant terminals and other peripheral equipment and design services from DMC.
- Revenue for the three months ending July 31, 1984 was \$20.2 million, a 30% increase over \$15.6 million for the same period in 1983. Net income for the period rose 28% from \$1.15 million in 1983 to \$1.47 million in 1984 and includes a nonrecurring gain of \$382,000 from the sale of DMC stock in August.
- As of April 30, 1984, Telecredit had 875 employees, segmented as follows:

Sales and service	247
Computer operations	261
Executive and administration	216
Part-time employees	110
LSI (full- and part-time)	<u>41</u>
	875
- Telecredit currently has a total of approximately 875 full- and part-time employees.
- Major competitors for check authorization services include Telecheck Services Inc. (Tymshare), Comp-U-Check Inc., and JBS Associates Inc. In card processing services, Telecredit competes with First Data Resources Inc., commercial banks, and associations owned by member banks.

KEY PRODUCTS AND SERVICES

- A three-year summary of Telecredit's source of revenue follows (\$ thousands):

FISCAL YEAR		4/84	4/83	4/82
ITEM				
Payment services processing				
• Check purchase (authorization)	\$ 38,574	\$ 33,242	\$ 32,312	
• Honest Face	3,760	3,229	1,872	
• Credit and debit card	24,199	20,646	19,500	
• Other	<u>1,281</u>	<u>1,512</u>	<u>1,963</u>	
	\$ 67,814	\$ 58,629	\$ 55,647	
• Percent increase from previous year	16%	5%	26%	
Light Signature Services	\$ 316	-	-	
Rental and other income	\$ 807	\$ 584	\$ 265	
• Percent increase (decrease) from previous year	38%	120%	(55%)	
Interest income	\$ 1,890	\$ 2,322	\$ 2,533	
• Percent increase (decrease) from previous year	(19%)	(8%)	(120%)	
Total	\$ 70,827	\$ 61,535	\$ 58,445	

- Payment services operating earnings, net of corporate expenses, and other income were \$8.4 million, \$6.2 million, and \$3.7 million in fiscal 1984, 1983, and 1982, respectively.
- Light Signature Services had operating losses of \$960,000 in 1984, primarily as a result of its development expenditures.
- Telecredit is principally engaged in providing payment services through a national on-line telecommunications network and computerized data bases.
 - Authorization of check, credit card, and debit card transactions is available to customers either by telephone or through point-of-sale terminals.
 - Telecredit also provides card transaction processing services in connection with various credit and debit cards and collection services.

TELECREDIT, INC.

- Customers include consumers, financial institutions, retail merchants, automobile dealers, oil companies, car rental companies, airlines, supermarkets, hospitals, hotels, and motels. More than four million payment authorization transactions are currently handled monthly for retail and bank subscribers. More than 75% are delivered through terminals, with the balance delivered from voice inquiries made through toll-free telephone lines to Telecredit's CRT operators.
- Check purchase (authorization) services provided by Telecredit include the following:
 - The Basic Service to merchant subscribers is provided directly to national, regional, and local merchants through telephone and point-of-sale terminals and is currently the most significant of the authorization services offered.
 - Telecredit's computers contain a data base developed from information provided by its subscribers that can be queried 24 hours a day, seven days a week. The information, indexed by driver's license numbers, includes check-cashing histories and is used in making check authorization decisions.
 - Telecredit agrees to purchase from subscribers at face value (or a lesser amount for which authorization has been provided) all returned checks it has approved. Telecredit does not normally agree to purchase checks if the face value exceeds \$1,500.
 - Subscribers are billed monthly based on the volume and dollar amount of authorization inquiries.
 - As part of its Basic Service, Telecredit had been marketing its own point-of-sale terminals to merchants principally outside of California.
 - The terminals were designed jointly by Telecredit and DMC and were manufactured by DMC.
 - Telecredit has placed over 6,000 terminals with merchants subscribing to check authorization services.
 - Telecredit instituted a major marketing effort in 1982 directed toward high-volume national accounts with emphasis on providing authorization services via electronic cash registers. Major accounts have been signed with Gordon's Jewelers, Target Stores division of Dayton Hudson, Macy's, T.J. Maxx, Hertz, Avis, Ryder Truck, Marriott, Sheraton, Hyatt, Toys "R" Us, and The Broadway department stores.
 - Check authorization services are also provided by Telecredit through point-of-sale terminal programs sponsored by banks and other financial institutions and associations.

TELECREDIT, INC.

- Telecredit contracts with institutions to make its data base available and to provide the support necessary for the institutions to offer check authorization services to their merchants' depositors. The merchants obtain these services through a terminal installed by a sponsoring institution and linked to that institution's computer facility.
- Each institution is responsible for installing, operating, and maintaining its system. Queries go to the Telecredit data base without operator intervention.
- Other Telecredit services include returned check claims processing, telephone backup, computer operations assistance, consumer inquiry support, and Fair Credit Act reporting.
- Clients include American Express, Bank of America, Chase Manhattan Bank, First National Bank of Chicago, Security Pacific Bank, Wells Fargo Bank, Mellon Bank, Valley National Bank, Continental Illinois Bank, and Harris Trust and Savings Bank.
- On June 30, 1984 Telecredit operated point-of-sale terminal programs in conjunction with 71 institutions using approximately 10,500 point-of-sale terminals.
- During fiscal 1984 Telecredit introduced the Check/Management Information Service (C/MIS). For an additional fee, Telecredit subscribers can receive management information reports that analyze the efficiency and impact of electronic delivery of check authorization services at the point of sale.
- Honest Face is a proprietary card-based check authorization service that provides consumers with ready check acceptance at Atlanta-area grocery and other retail stores.
 - Honest Face was acquired by Telecredit from the First National Bank of Atlanta in July 1981 for approximately \$3.1 million.
 - The Honest Face system uses a plastic card in conjunction with customer-operated electronic terminals that are owned by Telecredit and linked to a central authorization center to approve checks written by cardholders at the point of sale.
 - Currently there are approximately 500,000 consumers who have been issued Honest Face cards. Approximately 300 Atlanta-area grocery stores and several hundred other retail outlets use the Honest Face system.
 - Revenues are realized primarily from cardholder fees, terminal rentals, and merchant transaction fees. In March 1984 the annual consumer

TELECREDIT, INC.

cardholder fee was raised from \$5.00 to \$7.50. Cardholders initially issued their Honest Face cards by the First National Bank of Atlanta are charged an annual fee of \$5.00.

- Telecredit processes approximately 16 million transactions annually through the Honest Face terminals.
- Telecredit is currently developing enhancements to the system, including debit card features.
- Telecredit's Welcome Check Card program, a similar service introduced in 1978, was discontinued during 1982.
- Telecredit provides credit and debit card processing services in connection with MasterCard, VISA, and American Express transactions.
 - Card transaction processing services include authorization, data processing for the settlement and clearing of the credit and debit card transactions, preparation of monthly cardholder billing statements, embossing and encoding of cards, and receipt and processing of cardholder payments. Telecredit also maintains a customer service department, trains merchants in processing card sales transactions, and provides merchants with card supplies.
 - In a typical credit card transaction, a merchant will deposit a credit card sales slip with its bank and will receive immediate credit for the amount of the purchase less a certain discount. The sales slip is then transmitted through the national processing centers of MasterCard or VISA either by the bank or by a processor, such as Telecredit, to the bank or other institution that issued the card. The batching and routing of these slips, and the entering and transmission of electronic data to debit and credit the accounts of the various financial institutions and other entities involved is an essential part of transaction processing. Telecredit is compensated by retaining a part of the merchant discount applicable to certain transactions and by charging fees on each transaction processed.
 - The card-processing services are provided primarily to banks, credit unions, savings and loan associations, and national merchants. Clients also include merchants whose card transactions are processed by Telecredit through an arrangement with the merchants' bank.
 - As processor for Payment Systems for Credit Unions (PSCU), a trade association based in Florida, Telecredit considers itself a leader in providing card services to credit unions. The card services furnished to credit unions are an increasingly significant source of revenue.
 - Currently, Telecredit provides transaction processing services to more than 325 credit unions nationally who have more than 560,000 cardholders, up from only 110 credit unions three years ago.

TELECREDIT, INC.

- The agreement with PSCU is for a one-year term but is automatically extended for consecutive one-year terms unless either party gives the other party six-months prior written notice of its decision to terminate the agreement.
 - These services represent approximately 8% of fiscal 1984 payment service revenues.
- Telecredit performs services for Financial Transaction Systems, Inc. (FTSI), formerly Florida Credit Service Center, Inc., a Florida non-profit bank service corporation with more than 90 member banks. FTSI member banks currently have approximately 96,000 cardholders.
 - The agreement, which expires in 1986, has two options to renew for three years each.
 - A significant portion of Telecredit's revenues from card transaction processing services are attributable either to services performed for merchants depositing with a member of FTSI or banks affiliated with FTSI, or to transactions involving cards issued by the member banks.
 - These services represent approximately 16% of fiscal 1984 payment service revenues.
- Telecredit offers a collection letter service that assists subscribers in the collection of dishonored checks and uncollected receivables. Collection letters are generated by Telecredit's data processing equipment and are based on information transmitted by the creditor and information contained in Telecredit's own data base. The collection letter service is provided primarily in California, and revenues from this service have not been significant to date.
- Through Light Signatures, Inc. (LSI), Telecredit provides merchandise validation and information services.
 - LSI has developed a computer-based system that combines the randomness of nature with light measurement technology to detect counterfeit products and documents such as jeans, records, identification cards, credit cards, checks, stock certificates, and other items. The technology uses a computer-controlled beam of light that passes through a label or document to establish a counterfeit-proof "fingerprint" which is represented in encrypted digital form on the label or document, on a magnetic stripe, or in computer memory.
 - LSI's authentication system can also be used to control product diversion and provide information for marketing, inventory control, and licensee control.

TELECREDIT, INC.

- LSI has contracted with several leading manufacturers and licensors of consumer products, including Levi Strauss & Co., Anheuser-Busch, Chrysalis Records, and Ocean Pacific to protect their products from counterfeiting and other commercial abuse by "signaturizing" their labels and/or packaging. Revenues from Levi Strauss & Co. currently account for approximately 61% of Light Signature revenue.
- Potential new applications for this technology include documents of value (stock certificates, bonds, etc.), credit and debit cards, food stamps and other entitlement programs, and identification cards.
- New high-speed equipment, scheduled for installation later this year, will result in lower unit costs and higher profitability for LSI.
- Other noncomputer service revenue includes income from property leases, patent licensing, and interest income.
 - Excluding patents owned by LSI, Telecredit owns 14 patents pertaining to a number of systems and devices, including point-of-sale terminals, systems for controlling the use of magnetically encoded cards, credit verification systems, and telephone scheduling systems. Since January 1974, Telecredit has entered into 20 patent licensing agreements with major U.S. and foreign manufacturers.
 - Revenues from such licenses are not currently significant. Licensing fees of \$71,000, \$75,000, and \$46,000 were reported as revenues in fiscal 1982, 1983, and 1984, respectively.
 - Licensees include IBM, NCR, Burroughs, Docutel, Diebold, Concord Computing, Texas Instruments, CIT (France), ASEA (Sweden), ARDAC (Sweden), Fujitsu (Japan), Electronique Marcel Dassault (France), Datsaqaab (Sweden), Telecheck, Tymshare, General Instrument, TRW, and others.

INDUSTRY MARKETS

- Telecredit's fiscal 1984 computer services revenue was derived primarily from the retail industry. The company's clients include retail merchants, automobile dealers, oil companies, supermarkets, hospitals, hotels, motels, airlines, car rental companies, financial institutions, and consumers.
- The company's target market for its check purchase (authorization) services is retailers and travel and entertainment companies.
- The target market for the Honest Face program is the metropolitan Atlanta-area retail industry.
- The target market for card-processing services is small- to medium-sized financial institutions that issue credit and debit cards and retail merchants that accept credit and debit cards in payment for goods and services.

TELECREDIT, INC.

GEOGRAPHIC MARKETS

- Virtually 100% of Telecredit's fiscal 1984 revenue was derived from the U.S.
 - The heaviest concentration of clients are in major metropolitan areas across the U.S., with emphasis in California and Florida.
- Telecredit has principal branch offices in Atlanta and Tampa and additional sales/support offices in most major metropolitan areas.
- Light Signatures, Inc. is headquartered in Los Angeles.

COMPUTER HARDWARE AND SOFTWARE

- Telecredit operates computer facilities in Los Angeles, Atlanta, and Tampa.
 - Los Angeles.
 - 5 Tandem NonStop computers, operating under ACI Net and Tandem software.
 - 1 IBM 370/158, operating under OS/VSI.
 - Tampa.
 - 7 Tandem NonStop computers, operating under ACI Net and Tandem software.
 - 2 IBM 370/158s, operating under OS/VSI.
 - Atlanta.
 - 1 IBM System/7.
- LSI uses an IBM Series 1, augmented by an IBM 370/158, operating under OS/VSI, and five Signa I prototype production machines.
- Telecredit is considering establishing regional processing centers in selected areas nationwide, using Tandem computers, and may develop economical alternative means for distributed processing.

COMPANY HIGHLIGHT

TELECREDIT, INC.
1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, Chairman and CEO
Louis P. Buglioli, President
Public Corporation, OTC
Total Employees: 875
Total Revenue, Fiscal Year End
4/30/84: \$70,827,000
Computer Services Revenue:
\$67,814,000

THE COMPANY

- Telecredit, Inc., founded in 1961, provides on-line payment services that facilitate the financial exchange between buyers and sellers at the point of sale.
 - Principal services include check authorization, card processing, a consumer card service (Honest FaceTM), and computerized letter collection services.
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TELECREDIT, INC.

TELECREDIT, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	4/84	4/83	4/82	4/81	4/80
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 - In the merger of LSI into a new wholly owned subsidiary, Telecredit issued to the shareholders of LSI 446,250 shares of its common stock and made cash payments of \$5,117,350. Previously, Telecredit had owned a substantial minority position in LSI, for which it paid \$4,255,000.
 - LSI has developed a computer-based system to authenticate products and documents and protect against counterfeiting.
 - Prior to the acquisition, LSI was in the development stage and had not generated significant revenues. As of December 31, 1983, LSI had an accumulated deficit of approximately \$3.7 million.
 - LSI had approximately 35 employees at the time of the acquisition.
- During 1981 and 1982 Telecredit acquired 22% (384,267 shares of common stock) of DMC Systems, Inc. for a total cost of \$1,014,000.
 - DMC manufactures terminals and microcomputer systems, including the point-of-sale terminals used by Telecredit.

TELECREDIT, INC.

- Due to continuing operating losses and the level of sales of DMC, Telecredit wrote off its remaining investment in DMC during fiscal 1983.
- In June 1984 DMC shareholders sold all of the outstanding common stock of DMC to Equatorial Communications Company (ECC) for \$2 million in cash and ECC common stock.
 - In the sale Telecredit received 35,798 shares of ECC common stock worth approximately \$780,000. In August 1984 Telecredit sold 26,848 of these shares for \$631,000 and retained 8,950 shares currently valued at approximately \$152,000.
 - During fiscal 1984, 1983, and 1982, Telecredit purchased approximately \$931,000, \$1.7 million, and \$992,000 of point-of-sale merchant terminals and other peripheral equipment and design services from DMC.
- Revenue for the three months ending July 31, 1984 was \$20.2 million, a 30% increase over \$15.6 million for the same period in 1983. Net income for the period rose 28% from \$1.15 million in 1983 to \$1.47 million in 1984 and includes a nonrecurring gain of \$382,000 from the sale of DMC stock in August.
- As of April 30, 1984, Telecredit had 875 employees, segmented as follows:

Sales and service	247
Computer operations	261
Executive and administration	216
Part-time employees	110
LSI (full- and part-time)	<u>41</u>
	875
- Telecredit currently has a total of approximately 875 full- and part-time employees.
- Major competitors for check authorization services include Telecheck Services Inc. (Tymshare), Comp-U-Check Inc., and JBS Associates Inc. In card processing services, Telecredit competes with First Data Resources Inc., commercial banks, and associations owned by member banks.

KEY PRODUCTS AND SERVICES

- A three-year summary of Telecredit's source of revenue follows (\$ thousands):

FISCAL YEAR ITEM	4/84	4/83	4/82
Payment services processing			
• Check purchase (authorization)	\$ 38,574	\$ 33,242	\$ 32,312
• Honest Face	3,760	3,229	1,872
• Credit and debit card	24,199	20,646	19,500
• Other	<u>1,281</u>	<u>1,512</u>	<u>1,963</u>
	\$ 67,814	\$ 58,629	\$ 55,647
• Percent increase from previous year	16%	5%	26%
Light Signature Services	\$ 316	-	-
Rental and other income	\$ 807	\$ 584	\$ 265
• Percent increase (decrease) from previous year	38%	120%	(55%)
Interest income	\$ 1,890	\$ 2,322	\$ 2,533
• Percent increase (decrease) from previous year	(19%)	(8%)	(120%)
Total	\$ 70,827	\$ 61,535	\$ 58,445

- Payment services operating earnings, net of corporate expenses, and other income were \$8.4 million, \$6.2 million, and \$3.7 million in fiscal 1984, 1983, and 1982, respectively.
- Light Signature Services had operating losses of \$960,000 in 1984, primarily as a result of its development expenditures.
- Telecredit is principally engaged in providing payment services through a national on-line telecommunications network and computerized data bases.
 - Authorization of check, credit card, and debit card transactions is available to customers either by telephone or through point-of-sale terminals.
 - Telecredit also provides card transaction processing services in connection with various credit and debit cards and collection services.

TELECREDIT, INC.

- Customers include consumers, financial institutions, retail merchants, automobile dealers, oil companies, car rental companies, airlines, supermarkets, hospitals, hotels, and motels. More than four million payment authorization transactions are currently handled monthly for retail and bank subscribers. More than 75% are delivered through terminals, with the balance delivered from voice inquiries made through toll-free telephone lines to Telecredit's CRT operators.
- Check purchase (authorization) services provided by Telecredit include the following:
 - The Basic Service to merchant subscribers is provided directly to national, regional, and local merchants through telephone and point-of-sale terminals and is currently the most significant of the authorization services offered.
 - Telecredit's computers contain a data base developed from information provided by its subscribers that can be queried 24 hours a day, seven days a week. The information, indexed by driver's license numbers, includes check-cashing histories and is used in making check authorization decisions.
 - Telecredit agrees to purchase from subscribers at face value (or a lesser amount for which authorization has been provided) all returned checks it has approved. Telecredit does not normally agree to purchase checks if the face value exceeds \$1,500.
 - Subscribers are billed monthly based on the volume and dollar amount of authorization inquiries.
 - As part of its Basic Service, Telecredit had been marketing its own point-of-sale terminals to merchants principally outside of California.
 - The terminals were designed jointly by Telecredit and DMC and were manufactured by DMC.
 - Telecredit has placed over 6,000 terminals with merchants subscribing to check authorization services.
 - Telecredit instituted a major marketing effort in 1982 directed toward high-volume national accounts with emphasis on providing authorization services via electronic cash registers. Major accounts have been signed with Gordon's Jewelers, Target Stores division of Dayton Hudson, Macy's, T.J. Maxx, Hertz, Avis, Ryder Truck, Marriott, Sheraton, Hyatt, Toys "R" Us, and The Broadway department stores.
 - Check authorization services are also provided by Telecredit through point-of-sale terminal programs sponsored by banks and other financial institutions and associations.

TELECREDIT, INC.

- Telecredit contracts with institutions to make its data base available and to provide the support necessary for the institutions to offer check authorization services to their merchants' depositors. The merchants obtain these services through a terminal installed by a sponsoring institution and linked to that institution's computer facility.
- Each institution is responsible for installing, operating, and maintaining its system. Queries go to the Telecredit data base without operator intervention.
- Other Telecredit services include returned check claims processing, telephone backup, computer operations assistance, consumer inquiry support, and Fair Credit Act reporting.
- Clients include American Express, Bank of America, Chase Manhattan Bank, First National Bank of Chicago, Security Pacific Bank, Wells Fargo Bank, Mellon Bank, Valley National Bank, Continental Illinois Bank, and Harris Trust and Savings Bank.
- On June 30, 1984 Telecredit operated point-of-sale terminal programs in conjunction with 71 institutions using approximately 10,500 point-of-sale terminals.
- During fiscal 1984 Telecredit introduced the Check/Management Information Service (C/MIS). For an additional fee, Telecredit subscribers can receive management information reports that analyze the efficiency and impact of electronic delivery of check authorization services at the point of sale.
- Honest Face is a proprietary card-based check authorization service that provides consumers with ready check acceptance at Atlanta-area grocery and other retail stores.
 - Honest Face was acquired by Telecredit from the First National Bank of Atlanta in July 1981 for approximately \$3.1 million.
 - The Honest Face system uses a plastic card in conjunction with customer-operated electronic terminals that are owned by Telecredit and linked to a central authorization center to approve checks written by cardholders at the point of sale.
 - Currently there are approximately 500,000 consumers who have been issued Honest Face cards. Approximately 300 Atlanta-area grocery stores and several hundred other retail outlets use the Honest Face system.
 - Revenues are realized primarily from cardholder fees, terminal rentals, and merchant transaction fees. In March 1984 the annual consumer

cardholder fee was raised from \$5.00 to \$7.50. Cardholders initially issued their Honest Face cards by the First National Bank of Atlanta are charged an annual fee of \$5.00.

- Telecredit processes approximately 16 million transactions annually through the Honest Face terminals.
- Telecredit is currently developing enhancements to the system, including debit card features.
- Telecredit's Welcome Check Card program, a similar service introduced in 1978, was discontinued during 1982.
- Telecredit provides credit and debit card processing services in connection with MasterCard, VISA, and American Express transactions.
 - Card transaction processing services include authorization, data processing for the settlement and clearing of the credit and debit card transactions, preparation of monthly cardholder billing statements, embossing and encoding of cards, and receipt and processing of cardholder payments. Telecredit also maintains a customer service department, trains merchants in processing card sales transactions, and provides merchants with card supplies.
 - In a typical credit card transaction, a merchant will deposit a credit card sales slip with its bank and will receive immediate credit for the amount of the purchase less a certain discount. The sales slip is then transmitted through the national processing centers of MasterCard or VISA either by the bank or by a processor, such as Telecredit, to the bank or other institution that issued the card. The batching and routing of these slips, and the entering and transmission of electronic data to debit and credit the accounts of the various financial institutions and other entities involved is an essential part of transaction processing. Telecredit is compensated by retaining a part of the merchant discount applicable to certain transactions and by charging fees on each transaction processed.
 - The card-processing services are provided primarily to banks, credit unions, savings and loan associations, and national merchants. Clients also include merchants whose card transactions are processed by Telecredit through an arrangement with the merchants' bank.
 - As processor for Payment Systems for Credit Unions (PSCU), a trade association based in Florida, Telecredit considers itself a leader in providing card services to credit unions. The card services furnished to credit unions are an increasingly significant source of revenue.
 - Currently, Telecredit provides transaction processing services to more than 325 credit unions nationally who have more than 560,000 cardholders, up from only 110 credit unions three years ago.

TELECREDIT, INC.

- The agreement with PSCU is for a one-year term but is automatically extended for consecutive one-year terms unless either party gives the other party six-months prior written notice of its decision to terminate the agreement.
 - These services represent approximately 8% of fiscal 1984 payment service revenues.
- Telecredit performs services for Financial Transaction Systems, Inc. (FTSI), formerly Florida Credit Service Center, Inc., a Florida non-profit bank service corporation with more than 90 member banks. FTSI member banks currently have approximately 96,000 cardholders.
 - The agreement, which expires in 1986, has two options to renew for three years each.
 - A significant portion of Telecredit's revenues from card transaction processing services are attributable either to services performed for merchants depositing with a member of FTSI or banks affiliated with FTSI, or to transactions involving cards issued by the member banks.
 - These services represent approximately 16% of fiscal 1984 payment service revenues.
- Telecredit offers a collection letter service that assists subscribers in the collection of dishonored checks and uncollected receivables. Collection letters are generated by Telecredit's data processing equipment and are based on information transmitted by the creditor and information contained in Telecredit's own data base. The collection letter service is provided primarily in California, and revenues from this service have not been significant to date.
- Through Light Signatures, Inc. (LSI), Telecredit provides merchandise validation and information services.
 - LSI has developed a computer-based system that combines the randomness of nature with light measurement technology to detect counterfeit products and documents such as jeans, records, identification cards, credit cards, checks, stock certificates, and other items. The technology uses a computer-controlled beam of light that passes through a label or document to establish a counterfeit-proof "fingerprint" which is represented in encrypted digital form on the label or document, on a magnetic stripe, or in computer memory.
 - LSI's authentication system can also be used to control product diversion and provide information for marketing, inventory control, and licensee control.

TELECREDIT, INC.

- LSI has contracted with several leading manufacturers and licensors of consumer products, including Levi Strauss & Co., Anheuser-Busch, Chrysalis Records, and Ocean Pacific to protect their products from counterfeiting and other commercial abuse by "signaturizing" their labels and/or packaging. Revenues from Levi Strauss & Co. currently account for approximately 61% of Light Signature revenue.
- Potential new applications for this technology include documents of value (stock certificates, bonds, etc.), credit and debit cards, food stamps and other entitlement programs, and identification cards.
- New high-speed equipment, scheduled for installation later this year, will result in lower unit costs and higher profitability for LSI.
- Other noncomputer service revenue includes income from property leases, patent licensing, and interest income.
 - Excluding patents owned by LSI, Telecredit owns 14 patents pertaining to a number of systems and devices, including point-of-sale terminals, systems for controlling the use of magnetically encoded cards, credit verification systems, and telephone scheduling systems. Since January 1974, Telecredit has entered into 20 patent licensing agreements with major U.S. and foreign manufacturers.
 - Revenues from such licenses are not currently significant. Licensing fees of \$71,000, \$75,000, and \$46,000 were reported as revenues in fiscal 1982, 1983, and 1984, respectively.
 - Licensees include IBM, NCR, Burroughs, Docutel, Diebold, Concord Computing, Texas Instruments, CIT (France), ASEA (Sweden), ARDAC (Sweden), Fujitsu (Japan), Electronique Marcel Dassault (France), Datasab (Sweden), Telecheck, Tymshare, General Instrument, TRW, and others.

INDUSTRY MARKETS

- Telecredit's fiscal 1984 computer services revenue was derived primarily from the retail industry. The company's clients include retail merchants, automobile dealers, oil companies, supermarkets, hospitals, hotels, motels, airlines, car rental companies, financial institutions, and consumers.
- The company's target market for its check purchase (authorization) services is retailers and travel and entertainment companies.
- The target market for the Honest Face program is the metropolitan Atlanta-area retail industry.
- The target market for card-processing services is small- to medium-sized financial institutions that issue credit and debit cards and retail merchants that accept credit and debit cards in payment for goods and services.

TELECREDIT, INC.

GEOGRAPHIC MARKETS

- Virtually 100% of Telecredit's fiscal 1984 revenue was derived from the U.S.
 - The heaviest concentration of clients are in major metropolitan areas across the U.S., with emphasis in California and Florida.
- Telecredit has principal branch offices in Atlanta and Tampa and additional sales/support offices in most major metropolitan areas.
- Light Signatures, Inc. is headquartered in Los Angeles.

COMPUTER HARDWARE AND SOFTWARE

- Telecredit operates computer facilities in Los Angeles, Atlanta, and Tampa.
 - Los Angeles.
 - 5 Tandem NonStop computers, operating under ACI Net and Tandem software.
 - 1 IBM 370/158, operating under OS/VSI.
 - Tampa.
 - 7 Tandem NonStop computers, operating under ACI Net and Tandem software.
 - 2 IBM 370/158s, operating under OS/VSI.
 - Atlanta.
 - 1 IBM System/7.
- LSI uses an IBM Series 1, augmented by an IBM 370/158, operating under OS/VSI, and five Signa I prototype production machines.
- Telecredit is considering establishing regional processing centers in selected areas nationwide, using Tandem computers, and may develop economical alternative means for distributed processing.

FINANCIAL UPDATE TO HIGHLIGHT DATED NOVEMBER 1981

TELECREDIT, INC.
1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, President
Public Corporation, OTC
Total Employees: 632 permanent, 117
part-time
Total Revenue, Fiscal Year End
4/30/83: \$61,535,000
Computer Services Revenue:
\$58,629,000

TELECREDIT, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	4/83	4/82	4/81	4/80	4/79
Revenue (a)	\$ 61,535	\$ 58,445	\$ 46,004	\$ 38,582	\$ 31,812
. Percent increase from previous year	5%	27%	19%	21%	N/A
Income before taxes	\$ 7,569	\$ 5,751	\$ 5,058	\$ 1,011	\$ 2,560
. Percent increase (decrease) from previous year	32%	14%	400%	(61%)	62%
Net income	\$ 4,215	\$ 3,330	\$ 2,747	\$ 741	\$ 1,470
. Percent increase (decrease) from previous year	27%	21%	271%	(50%)	80%
Earnings per share (b)	\$ 0.91	\$ 0.77	\$ 0.74	\$ 0.21	\$ 0.41
. Percent increase (decrease) from previous year	18%	4%	252%	(49%)	N/A

- (a) Restated due to a reclassification of certain selling expenses that were previously offsets to revenue.
- (b) Restated to reflect a three-for-two stock split in January 1983.

SOURCE OF REVENUE

- Ninety-five percent of Telecredit's total fiscal 1983 revenue was from processing services. The remaining 5% of revenue was from noncomputer services-related patent licenses and interest income.

TELECREDIT, INC.

- A three-year summary of Telecredit's source of revenue follows (\$ thousands):

ITEM	FISCAL YEAR	4/83	4/82	4/81
Payment services processing (a)				
• Check authorization		\$ 36,468	\$ 34,221	\$ 27,838
• Credit and debit card		20,646	19,500	14,662
• Other		<u>1,515</u>	<u>1,926</u>	<u>1,764</u>
		\$ 58,629	\$ 55,647	\$ 44,264
• Percent increase from previous year		5%	26%	N/A
Patent licenses		\$ 584	\$ 265	\$ 589
• Percent increase (decrease) from previous year		120%	(55%)	N/A
Interest income		\$ 2,322	\$ 2,533	\$ 1,151
• Percent increase (decrease) from previous year		(8%)	120%	N/A
Total		\$ 61,535	\$ 58,445	\$ 46,004

(a) Restated to conform with reclassification of revenue.

COMPANY HIGHLIGHT

TELECREDIT, INC.
1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, President
Public Corporation, OTC
Total Employees: 711
Total Revenue, Fiscal Year End
4/30/81: \$45,581,000

PRINCIPAL BUSINESS Telecredit was incorporated in 1961 to provide computerized check verification services in California. Check guarantee, collection services, point-of-sale terminal support, and credit card authorization and processing services were subsequently added.

- Telecredit now markets these services to retail merchants, banks, credit unions, savings and loans, hotels, automobile dealers, hospitals, and other industries nationwide.

FINANCIALS (\$ thousands, except per share data)

FISCAL YEAR ITEM	4/81	4/80	4/79	4/78*	4/77*
Revenue	\$45,581	\$38,435	\$31,830	\$24,698	\$19,610
• Percent increase from previous year	19%	21%	29%	26%	43%
Income before taxes and extraordinary item	\$ 5,058	\$ 1,011	\$ 2,560	\$ 1,576	\$ 1,912
• Percent increase (decrease) from previous year	400%	(61%)	62%	(18%)	4%
Net income	\$ 2,747	\$ 741	\$ 1,470	\$ 817	\$ 1,678
• Percent increase (decrease) from previous year	271%	(50%)	80%	(51%)	63%
Per share earnings	\$ 1.12	\$ 0.31	\$ 0.91	\$ 0.51	\$ 1.10
• Percent increase (decrease) from previous year	261%	(66%)	78%	(54%)	51%

* Restated figures reflect the pooling of interest acquisition of Florida Service Center in September 1977.

TELECREDIT, INC.

- 1980 performance was significantly affected by costs (\$1.1 million in fiscal 1980) to convert Telecredit's IBM based software to run on Tandem mini-computers, and marketing expenses to start the Welcome Check services.
- Telecredit spent \$0.7 million in fiscal 1981, \$1.3 million in fiscal 1980, and \$0.9 million in fiscal 1979 for purchased and internally developed software.

SOURCES OF REVENUE (\$ thousands)

FISCAL YEAR ITEM	4/81	4/80	4/79	4/78	4/77
Checking services	\$28,914	\$23,499	\$18,981	\$15,293	\$12,368
. Percent increase from previous year	23%	24%	24%	24%	77%
Credit card services	\$14,928	\$13,942	\$12,135	\$ 8,982	\$ 6,660
. Percent increase from previous year	7%	15%	35%	35%	87%
Patent licenses	\$ 589	\$ 186	\$ 100	0	\$ 330
. Percent increase from previous year	217%	86%	-	-	-
Interest income	\$ 1,150	\$ 808	\$ 614	\$ 423	\$ 252
. Percent increase from previous year	42%	32%	45%	68%	33%
Total	\$45,581	\$38,435	\$31,830	\$24,698	\$19,610

ACQUISITIONS

- In May 1981, Telecredit acquired 16% of Light Signatures, Inc., for \$1.75 million. Light Signatures, a privately held corporation, is developing a computer-based system to detect counterfeiting of documents and other products such as jeans, records, tapes, checks, driver's licenses, and passports.
- In June 1981, Telecredit acquired 20% of DMC Systems Inc., for \$0.75 million. DMC manufactures terminals and microcomputer systems, including the point-of-sale terminals used by Telecredit.
- In June 1981, Telecredit signed a letter of intent to acquire the check authorization program known as "Honest Face Systems" owned by the First National Bank of Atlanta. Honest Face Systems, a card based check acceptance system, operates in Georgia supermarkets.
- In March 1981, Telecredit acquired Centel Transaction Services, a subsidiary of Central Telephone and Utilities Corporation. Centel provides check approval and credit card authorization services through point-of-sale terminals located in Nevada retail merchant establishments.

EMPLOYEES

- As of April 1981, Telecredit had 584 full-time employees.

- Marketing and sales	206
- Computer operations	259
- General and administrative	<u>119</u>
	584
- Telecredit also had approximately 127 part-time employees.

PRODUCTS AND SERVICES

- Telecredit provides check authorization services, card transaction processing services, patent licenses, and collection services. Over 100,000 retail outlets use Telecredit services.
- Check authorization includes five components.
 - Check Verification Services became available from Telecredit in 1961. The data base, developed from banking, retailer, and law enforcement information, can be queried 24 hours a day, seven days a week.
 - Telecredit has between 5,000 and 10,000 subscribers to this program. Clients contract for a specified number of inquiries, with additional inquiries billed at a per check fee.
 - Most users are high-volume retail or banking establishments in California.
 - Check verification provides no guarantee or purchase agreement on returned checks.
 - Check Guarantee Services were introduced in 1966. Under this program Telecredit guarantees its subscribers against loss on all approved checks. Telecredit does not normally approve money orders, insurance drafts, travelers checks or checks over \$1,500.
 - This agreement requires Telecredit to purchase from its subscribers at face value all returned checks it has approved.
 - Telecredit has contracted with Lumberman's Mutual Casualty Company, part of the Kemper Insurance Group, to provide a surety bond to assure Telecredit's check guarantee obligations.
 - Telecredit has about 80,000 clients for this service in the U.S. Fees typically range from 2-4% of the guaranteed check's face value.

TELECREDIT, INC.

- The value of checks purchased in fiscal 1981 was \$973 million, up 36% over 1980. Introduction of negotiated order withdrawals for savings and loans, and share drafts for credit unions, made available new check guarantee markets.
- The net loss ratio on the total value of check purchase authorizations was reduced 9% in fiscal 1981 versus 1980 due to more timely updating of the data base. This resulted in approximately \$775,000 in additional net income.
- Point-of-Sale Check Verification and Guarantee services began in January 1976. Telecredit makes its data base available to 35 financial institutions, serving 10,000 terminals.
 - Each institution is responsible for installing, operating, and maintaining its system. Queries go to the Telecredit data base without operator intervention.
 - Clients include American Express, Bank of America, Chase Manhattan Bank, First National Bank of Chicago, Security Pacific Bank, Wells Fargo Bank, and others.
 - Telecredit has installed its own proprietary systems in Florida and Nevada. The Florida systems were installed by Telecredit's Financial Transaction Systems subsidiary in Nevada and by the Central Communications Company subsidiary.
 - Telecredit has ordered 1,600 terminals manufactured by DMC Systems for placement in Telecredit sponsored networks in 1981.
 - Other Telecredit services include returned check claims processing, telephone back-up, computer operations assistance, consumer inquiry support, and Fair Credit Act reporting.
- Collection Letter Services began in 1970 with the formation of Telecredit's Collection Services subsidiary to aid subscribers with collection of bad checks and unpaid receivables.
 - Collection letters are generated on Telecredit's data processing equipment from information provided by the subscriber and from Telecredit's data base.
 - Debtors pay the creditor directly. Telecredit fees are calculated on a transactional basis and are not contingent on the collection of debt.
- Welcome Check Card Services became available in 1978. Under this service, participating institutions provide Telecredit with financial information about their customers. Institutions or Telecredit issue Welcome Check cards or place the Welcome Check logo on existing

cards for identification. Merchants are charged a lower rate for check guarantee of Welcome Check cardholders since the risk to Telecredit is lower.

- . Participating institutions are responsible for attracting as many merchants as possible to the program.
- . Welcome Check Card programs are available in New York through Chase Manhattan Bank, in Baltimore and Washington through the Equitable Trust Company, in Cincinnati and Dayton through the Central Trust Company, and in California via Wells Fargo Bank.
- . The program is available in Florida from 72 Florida bank members of Florida EFT, Inc., an association of 440 Florida banks.
- . The program is available in California through 20 credit unions and six savings and loan institutions.
- . Chase Manhattan Bank has agreed to offer the service to its correspondent banks in all states except California and Florida.
- Credit Card Transaction Processing Services became available from Telecredit through the 1977 acquisition of Florida Service Center. Telecredit handles the transfer and accounting of card sales slips from the receiving merchants bank, through the processing center of Visa or MasterCard, to the bank or other institution issuing the card.
 - Services available for MasterCard and Visa credit cards include:
 - . Transaction settlement and clearing.
 - . Monthly cardholder billing statement preparation.
 - . Cardholder payment processing.
 - . Credit card embossing.
 - . Merchant training in Telecredit services.
 - . Credit card supply provision.
 - . Question answering service.
 - Telecredit agrees to reimburse the merchant's bank within three business days following receipt of the sales slip. If Telecredit is unable to complete the transaction in this time, it must use its own or borrowed funds to meet this obligation.
 - . In fiscal 1980, interest expense on money borrowed for this purpose was \$132,000.
 - . In fiscal 1981, transactions were completed in one to two days and invested in short-term accounts, creating some interest income.

- In fiscal 1981, total transaction value fell, but revenue and profits improved due to the termination of an unprofitable agreement with a large customer.
- Though card processing services are available nationwide, revenues for this segment are primarily from merchants depositing with, or transactions involving cards issued by, banks belonging to Financial Transaction Systems (FTS), Inc. FTS is a Florida nonprofit bank service corporation with approximately 100 member banks.
 - Telecredit's contract with FTS expires in 1982. A new three-year contract is being negotiated.
 - Telecredit has access to the Visa and MasterCard authorization networks through its FTS contract.
- Telecredit contracted with the Florida Informagement Services (FIS) division of Florida Savings and Loan Services Inc., in December 1980 to issue and process Visa debit cards for the 93 savings and loan institutions associated with FIS.
 - This represents Telecredit's first savings and loan contract for card processing services.
 - Telecredit has worked with credit unions since 1978. There are 115 credit unions currently contracted with Telecredit.
- Telecredit also provides card authorization to merchants from the Visa, MasterCard, American Express, Carte Blanche, and Diners Club authorization centers. Revenue contribution from these services is not significant.
- Other services consist mainly of patent licensing agreements and sales of excess computer time.
 - Patent licenses contributed \$589,000 in revenue and \$199,000 in net income during fiscal 1981. Since 1974, a total of \$4 million in revenue have originated in patent license agreements.
 - There are 19 licenses to date of Telecredit patents. These have been to Burroughs, Concord Computing, Diebold, Docutel, General Instrument, IBM, NCR, Telecheck, Texas Instruments, Tymshare, ARDAC (Sweden), ASEA (Sweden), CIT (France), DATASAB (Sweden), Electronique Marcel Dossault (France), and Fujitsu (Japan).
- Telecredit is developing a bill payment service to begin in late 1981. Other market areas under investigation are home banking and automated teller machine services.

INDUSTRY MARKETS

- Telecredit revenue is derived mainly from the retail, bank, credit union, savings and loan, hotel, automobile, and hospital industries.

GEOGRAPHIC MARKETS

- Almost 100% of Telecredit's revenue is derived from the U.S., with an insignificant amount coming from Canada and South America. Heaviest concentrations are in major metropolitan areas of California, Florida, Massachusetts, New York, Texas, and the District of Columbia.
- Telecredit markets its credit card and checking services through 14 sales offices nationwide.

COMPUTER HARDWARE AND SOFTWARE

- Telecredit operates computer facilities in Tampa (FL) and Los Angeles (CA). Installed equipment includes:
 - 1 IBM System/370 Model 145 in Tampa.
 - 1 IBM System/370 Model 158 in Los Angeles.
 - 2 IBM System/7s in Los Angeles.
 - 2 Tandem NON-STOP minicomputer systems in Tampa.
- Telecredit plans to expand its computer facilities by adding additional Tandem systems rather than upgrading the IBM mainframes.
- In late 1981, Telecredit plans to consolidate all computer processing in a new Tampa facility.



COMPANY HIGHLIGHT

TELECREDIT, INC.

1901 Avenue of the Stars
Los Angeles, CA 90067
(213) 277-4061

Lee A. Ault, President
Public Corporation, OTC
Total Employees: 681
Total Revenues, Fiscal Year End
4/30/79: \$31,830,000

THE COMPANY

- Telecredit, Inc., was incorporated in 1961 to provide on-line check verification services in California. Check guarantee services began in 1966 with credit card authorization and processing beginning in 1977.
- Telecredit markets these processing and data base services to retail establishments throughout the United States, particularly the automobile, hotel, motel, and apparel industries.
- In 1979 Telecredit began installing a group of Tandem NON-STOP minicomputers. Telecredit will use these to expand the central computer facilities' processing power. To hold down rising communications costs, Telecredit plans to distribute its data base by installing additional minis at regional centers and equipping them with regional data bases.
- Telecredit's average annual growth in revenues over the last five years has been 28%. Revenues for 1979 were \$31.8 million up 29% from 1977 revenues of \$24.7 million. The following table provides a five year financial summary:

COMPANY HIGHLIGHT/TELECREDIT, INC.

TELECREDIT, INC. FIVE YEAR FINANCIAL SUMMARY (\$ Thousands, Except Per Share Data)

ITEM \ FISCAL YEAR	1979	1978 (A)	1977 (A)	1976 (A)	1975 (A)
Revenues	\$31,830	\$24,698	\$19,610	\$13,674	\$ 9,199
. Percent increase from previous year	29%	26%	43%	48%	59%
Income before taxes and extraordinary item	\$2,560	\$ 1,576	\$ 1,912	\$ 1,832	\$ 786
. Percent increase from previous year	62%	-18%	4%	133%	12%
Net income	\$1,470	\$ 817	\$ 1,568	\$ 964	\$ 429
. Percent increase from previous year	80%	-48%	63%	124%	35%
Per share earnings	\$.91	\$.51	\$ 1.10	\$.73	\$.34
. Percent increase from previous year	78%	-54%	51%	115%	13%

(A) Restated figures reflect combined financials after acquisition of Florida Service Center in September 1977. FSC revenues for year end 4/30/77 were \$5,690,000 with profits of \$209,000.

- Telecredit management stated that lower profits in fiscal 1978 were due to material costs incurred in acquiring Florida Service Center, settlement of patent licensing litigation with TRW, expansion of the national marketing program, and a large investment in software development.
- Telecredit presently employs 657 persons. The employee breakdown is:

- Marketing and sales	161
- Computer operations	385
- General and administrative	<u>111</u>
	657
- Telecredit's main competition for credit card processing services comes from bank holding companies, bank service companies, and bank associations.

KEY PRODUCTS AND SERVICES

- Telecredit revenues are divided between checking and credit card processing services. The following shows what percentage each contributed to gross revenues over the last five years:

COMPANY HIGHLIGHT/TELECREDIT, INC.

TELECREDIT REVENUES BY TYPE OF SERVICE (\$ Thousands)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
Checking services revenues	\$19,098 60%	\$13,337 54%	\$10,788 55%	\$ 6,973 51%	\$ 3,680 40%
Credit card services revenues	\$12,095 38%	\$ 7,903 32%	\$ 5,687 29%	\$ 3,555 26%	\$ 2,208 24%
Other services revenues	\$ 637 2%	\$ 3,458 14%	\$ 3,135 16%	\$ 3,145 23%	\$ 3,310 36%
	<u>\$31,830</u>	<u>\$24,698</u>	<u>\$19,610</u>	<u>\$13,674</u>	<u>\$ 9,199</u>

- Checking services include five major programs:
 - Check Verification services became available from Telecredit in 1961. The data base, developed from banking, retailer, and law enforcement information, can be queried 24 hours a day, seven days a week.
 - Telecredit presently has between 5,000 and 10,000 subscribers to this program. Clients contract for a specified number of inquiries, with additional inquiries billed at \$.35 to \$.38 per check.
 - Most users are high volume retail or banking establishments in California.
 - Check verification provides no guarantee or purchase agreement on returned checks.
 - Check Guarantee was introduced in 1966. Under this program Telecredit guarantees its subscribers against loss on all approved checks. (Telecredit does not normally approve checks over \$1,000, money orders, insurance drafts, or travelers checks).
 - This agreement requires Telecredit to purchase from its subscribers at face value all returned checks it has approved.
 - Telecredit has contracted with Lumberman's Mutual Casualty Company, part of the Kemper Insurance Group, to provide a surety bond to assure Telecredit's check guarantee obligations.
 - Telecredit presently has approximately 80,000 clients of this service throughout the U.S. Fees typically range from 2-4% of the guaranteed check's face value.
 - Collection Letter services began in 1970 with the formation of Telecredit's Collection Services subsidiary to aid subscribers with collection of bad checks and unpaid receivables.
 - Collection letters are generated on Telecredit's data processing equipment from information provided by the subscriber and from Telecredit's data base.

COMPANY HIGHLIGHT/TELECREDIT, INC.

- Debtors pay the creditor directly. Telecredit fees are calculated on a transactional basis and are not contingent on the collection of debt.
 - Point-of-sale check verification and guarantee began in January 1976. Telecredit presently makes its data base available to POS terminals operated by 18 financial institutions. Each institution is responsible for installing, operating, and maintaining its own system.
 - Current clients include Bank of America, Chase Manhattan Bank, First National Bank of Chicago, Security Pacific National Bank, Southeastern National Bank, and Wells Fargo Bank and others.
 - Welcome Check Card services became available in fiscal 1979. The Welcome Check Card is an identification and check guarantee card to be used at locations using Telecredit services. Banks may contract to issue this card to their depositors, or individuals may become members directly by paying annual or transactional fees.
 - Central Trust Company of Cincinnati became the first major user in August 1978, followed by Chase Manhattan Bank in October 1978.
 - Telecredit stated welcome check card services were not yet profitable in fiscal 1979.
- Credit card authorization and processing services became available from Telecredit through the acquisition of Florida Service Center (FSC) in September 1977.
 - Services available for Master Charge and Visa credit cards include:
 - Transaction settlement and clearing.
 - Monthly cardholder billing statement preparation.
 - Cardholder payment processing.
 - Credit card embossing.
 - Merchant training in Telecredit services.
 - Credit card supply provision.
 - Question answering service.
 - Negative information for Carte Blanche and Diners Club is available.
 - Telecredit has access to the Mastercharge and Visa authorization networks through its contract with Florida Credit Service Center. Telecredit performs credit card services for many of Florida Credit Service Center's member banks.
- Other services consist mainly of patent licensing agreements and sale of excess computer time.
 - Patent licensing revenues have totaled \$3 million since 1974.
 - Licensees include Burroughs, Concord Computing, Diebold, Docutel, IBM, NCR, Texas Instruments, ARDAC (Sweden), ASEA (Sweden), CIT (France), Electronique Marcel Dossault (France), and Fujitsu (Japan).

COMPANY HIGHLIGHT/TELECREDIT, INC.

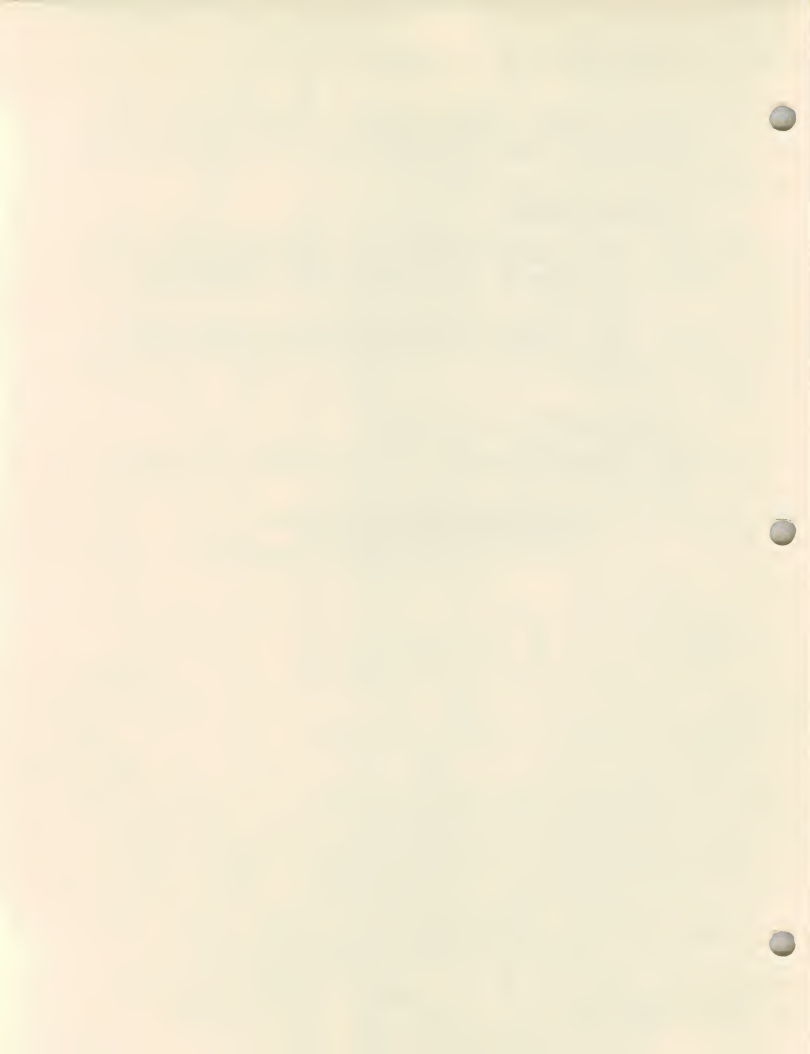
INDUSTRY MARKETS Telecredit revenues are derived mainly from the automotive, hotel, motel, and apparel industries, with the remainder coming from banking institutions.

GEOGRAPHIC MARKETS

- Excluding immaterial income from Canada and South America, 100% of Telecredit revenues are derived from the U.S. Heaviest concentrations are in major metropolitan areas of California, Florida, Massachusetts, New York, Texas, and Washington, DC.
- Telecredit markets its credit card and checking services through 14 sales offices nationwide. The point-of-sale terminal program is marketed in conjunction with EFT Data Services, Inc., a subsidiary of Control Data Corporation.

COMPUTER HARDWARE AND SOFTWARE

- Telecredit operates computer facilities in Tampa, FL and Los Angeles, CA. Installed equipment includes:
 - One IBM System/370 Model 145 in Tampa.
 - One IBM System/370 Model 158 in Los Angeles.
 - Two IBM System/7s in Los Angeles.
 - Two Tandem NON-STOP minicomputer systems in Tampa.



COMPANY PROFILE

TELERATE, INC.
One World Trade Center
New York, NY 10048
(212) 938-5200

Neil S. Hirsch, President and CEO
Public Corporation, NYSE, PSE
Total Employees: 1,550
Total Revenue, Fiscal Year End
12/31/87: \$335,753,000

The Company

Telerate, Inc., formed in 1980, is the parent of Telerate Systems Incorporated, which was founded in 1969. The company provides on-line financial market data to banks, other financial institutions, corporations, government agencies, brokers, and private investors worldwide.

- During 1987 Dow Jones & Company, Inc. increased its ownership in Telerate to 56% and, as a result, now includes Telerate's financial results in its accounts on a consolidated basis. Telerate has changed its fiscal year end date from September 30 to December 31 to conform with Dow Jones'.

Calendar 1987 revenue reached \$335.8 million, a 45% increase over \$232.3 million for calendar 1986. Net income rose 74%, from \$43.2 million to \$75.2 million. In the financial summary that follows, unaudited results for calendar 1986 have been included for comparison purposes.

**TELERATE, INC.
FINANCIAL SUMMARY**
(\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	12/87	12/86	9/86	9/85	9/84
Revenue	\$335,753	\$232,277	\$210,355	\$148,486	\$106,285
• Percent increase from previous year	45%	*	42%	40%	66%
Income before taxes	\$138,755	\$96,900	\$86,914	\$69,241	\$58,695
• Percent increase from previous year	43%	*	26%	18%	61%
Net income	\$75,217	\$43,222	\$38,751	\$33,399	\$28,651
• Percent increase from previous year	74%	*	16%	17%	43%
Earnings per share (a)	\$0.79	\$0.49	\$0.44	\$0.38	\$0.33
• Percent increase from previous year	61%	*	16%	15%	37%

* Percent change between fiscal 1986 and calendar 1986 is not meaningful.

(a) Restated to reflect a 2-for-1 stock split, in the form of a 100% stock dividend, on October 13, 1987.

Telerate management attributes revenue increases primarily to increases in the number of terminals worldwide as well as increased sales of optional services and equipment. To a lesser extent, revenue increases were attributed to the passthrough of increased communication tariffs in North America.

Research and development expenditures were \$4.5 million for the year ending December 31, 1987, compared to \$2.9 million and \$1.4 million for the fiscal years ending September 30, 1986 and 1985, respectively.

Recent acquisitions made by Telerate include the following:

- In February 1987 Telerate completed the acquisition of the minority interest (49.6%) in AP-Dow Jones/TELERATE Company from The Associated Press (24.8% interest for \$65 million in cash and notes) and from Dow Jones & Company, Inc. (24.8% interest for 5.2 million shares of Telerate common stock valued at \$65 million).
- Since October 1983 AP-Dow Jones/TELERATE Company has been responsible for Telerate's business outside North

America. It now operates as Telerate International Company, a wholly owned subsidiary of Telerate.

- In October 1987 Telerate completed the acquisition of CMQ Communications Inc. of Toronto for approximately \$71 million in cash and the assumption of \$9.3 million of debt (which has been repaid).
- CMQ is the exclusive distributor of Telerate services in Canada and provides a real-time quote service drawing on data from all the U.S. and Canadian stock and commodities exchanges.
- CMQ had approximately 250 employees at the time of the acquisition and estimated revenues of \$27 million for calendar 1987 and \$18.9 million for calendar 1986.
- CMQ now operates as a wholly owned Canadian subsidiary of Telerate.
- Outside of Canada, CMQ's operations were merged with Telerate.

During 1987 Telerate entered into the following agreements:

- In October 1987 Telerate formed a partnership with the American Telephone and Telegraph Company to develop and market electronic transaction services for global financial markets. This partnership will provide a system that will enable traders to manage transactions instantaneously and with greater control and flexibility than is presently possible. The service, still under development, initially will be targeted to foreign exchange dealers.
- In June 1987 Telerate entered into an agreement with Lotus Development Corporation to produce software that will allow Lotus 1-2-3[®] users to access Telerate's real-time fixed income and foreign exchange information from within their spreadsheets. The product is scheduled for commercial availability during 1988.

Telerate's major competition comes from Reuters Limited.

Key Products and Services.

Virtually all of Telerate's 1987 revenue was derived from remote computing services and associated terminal rentals. The remainder was derived from software analysis tools.

The Telerate Financial Information Network is an on-line system that provides current financial market data to banks, other financial institutions, corporations, government agencies, brokers, and private investors through more than 67,000 video display screens (of which more than 48,000 are owned by Telerate) located at subscribers' premises throughout the world.

- The network features direct input from more than 2,000 banks and other financial institutions, including brokers and dealers in the relevant markets, as well as financial news services.
- The Standard Telerate service offers subscribers access to more than 60,000 video pages of prices, rates, market data, and news covering major financial markets, including the following:
 - U.S. Treasury and federal agency securities.
 - Money market instruments.
 - Foreign exchange.
 - U.S. mortgage market securities.
 - Precious metals.
 - Financial futures and energy.
 - Quotes for over 75,000 North American publicly traded instruments (exchange traded) through CMQ. International instruments will be added later this year.
- The Telerate Access Service (TAS) enables subscribers with an IBM or compatible microcomputer to access Telerate information at home, on the road, or in the office. TAS also provides access to the Dow Jones News/Retrieval[®] service and numerous third party information data bases.
- The Telerate Energy Service offers a data base of on-line quotes for energy futures and options; spot prices for crude oil, petroleum products, natural and liquified petroleum gases and condensates; posted prices for crude oil and refined products; and coverage of Far East and Mideast tenders.
 - Information is provided from state oil companies, majors, independents, refiners, and trading and brokerage houses.

- Optional services are available for industry analysis, specialized market pricing, market commentary, inventory statistics, and natural gas market information.
- The IBAA-Telerate Market Access Service, developed by Telerate and the Independent Bankers Association of America for commercial banks and other financial institutions, is a microcomputer-based dial-up service that offers direct access to a range of money market data.
- Telerate's Optional Services offer commentary and analysis by various Wall Street experts, as well as money market forecasts, trend information, and fundamental and technical analyses of key markets.

Telerate also offers the following analysis/training tools:

- TacticianTM, a microcomputer software-based product for fixed-income investors developed and marketed in conjunction with Giltnet, Ltd. of Australia, is a fundamental analysis system that combines live market data from Telerate's information network with analytics and a five-year historical data base.
 - Analytics include yield curves, spread analysis, horizon analysis, basis trading, option pricing, and position management.
 - Tactician pricing varies by subscriber specifications.
- Compu TracTM is a microcomputer software product for technical analysis.
 - A library of pre-programmed analysis routines allows the user to test trading ideas for profitability using current and historical data.
 - Compu Trac is priced at \$1,900.
- TeleTrac^R is a microcomputer-based technical analysis system that captures live price information and transforms it into high-resolution graphic displays.
 - TeleTrac pricing varies by subscriber specifications.
- Telerate Intuition Expert, developed by Financial Courseware of Dublin, uses CD ROM technology to provide financial training programs for novices and professionals.

- Current courses include Money Market Fundamentals, Foreign Exchange Trading, Capital Market Concepts, Futures & Options, Corporate Treasury Management, International Trade, and Charting.
- Pricing per system ranges from \$450 to \$850, depending on the quantity purchased.
- Over 12 Telerate Intuition Expert systems have been licensed since the product was introduced in the U.S (April 26, 1988) and the U.K. (May 3, 1988).

Other Telerate products and services include the following:

- Telerate's Matrix Service (formerly Telerate's Broadcast Service) enables subscribers to receive Telerate information via a satellite dish antenna or leased lines and to create composite pages of information of their own choosing. The service also includes several market-focused data packages (i.e., energy or mortgage data).
- The Pocket Display Quote (PDQ) is a lightweight, battery-powered, hand-held FM sideband receiver. Subscribers living in the New York or Chicago metropolitan areas can use the PDQ to receive Telerate information. PDQ is priced at \$205.
- The Telerate Digital Page Feed, designed for multi-terminal users, sends information directly from the Telerate network to a subscriber's in-house computer for redistribution.

The Standard Telerate service and communications charges are \$540 per terminal per month for U.S. subscribers. Additional charges are made for optional services and equipment.

- The average U.S. subscriber pays approximately \$700 per terminal per month.
- Subscribers also pay a one-time installation fee of \$500 per terminal.
- Certain optional services (such as Quotron quotations or optional Dow Jones newswires) require additional payments directly to the vendor and are not included in Telerate's revenue.
- Prices for international clients vary by location and are generally higher than prices paid by U.S. subscribers.

Industry Markets

Telerate's revenue is derived from banks, other financial institutions, brokers, corporations, government agencies, and private investors.

Telerate's subscribers include virtually all of the world's largest banks and investment banking/brokerage firms.

Geographic Markets

Approximately 56% of Telerate's 1987 revenue was derived from North America. The remaining 44% of revenue was derived from foreign operations, primarily the U.K., Japan, France, Hong Kong, Australia, Singapore, Germany, and Switzerland.

A three-year financial summary by geographic source follows:

**TELERATE, INC.
THREE-YEAR FINANCIAL SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	12/87		9/86		9/85	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Revenue						
• North America	\$189.4	56%	\$134.9	64%	\$106.0	71%
• Foreign	146.4	44%	75.5	36%	42.5	29%
Total	\$335.8	100%	\$210.4	100%	\$148.5	100%
Income from operations						
• North American	\$83.2	62%	\$57.5	71%	\$49.0	78%
• Foreign	51.0	38%	23.2	29%	13.8	22%
Total	\$134.2	100%	\$80.7	100%	\$62.8	100%

As of December 31, 1987, approximately 60% of the display screens were located in North America and the balance throughout the rest of the world.

Telerate has U.S. offices in Boston, Miami, San Francisco, Los Angeles, and Chicago. Regional sales offices are located in Atlanta, Chicago, Los Angeles, and San Francisco.

The company provides Telerate's services in Canada through its CMQ Communications Inc. subsidiary, which has three sales offices in Canada.

Telerate International Company operates Telerate's business outside North America and has granted exclusive sublicenses to third parties in certain countries, most significantly Japan and Switzerland.

Computer Hardware and Software

Telerate has 40 Perkin-Elmer 32-bit Megamini and two Stratus computers installed at its New York City headquarters and in its Atlanta, Chicago, Los Angeles, and San Francisco regional offices.

CMQ has nine Stratus computers installed in Toronto, Vancouver, and Montreal.

The Telerate Network's information data base is processed by New York City office computers. Data is then transmitted via common carrier circuits to the regional computers and to the computers of Dow Jones and The Associated Press in London, Hong Kong, Frankfurt, and Zurich.

Clients may use a microcomputer to access Telerate's network via dedicated lines, satellite, FM radio sideband, or direct dial. Telerate terminals may be used for dedicated line access.

COMPANY PROFILE

TELERATE, INC.
One World Trade Center
New York, NY 10048
(212) 938-5200

Neil S. Hirsch, President and CEO
Subsidiary of Dow Jones & Company
Total Employees: 2,500
Total Revenue, Fiscal Year End
12/31/89: \$500,000,000*

*INPUT estimate

The Company

Telerate Systems, Inc. was founded in 1969. In 1980, Telerate, Inc., a holding company, was organized with Telerate Systems as its major operating subsidiary. The company provides on-line financial market data to banks, other financial institutions, corporations, government agencies, brokers, and private investors worldwide.

On November 3, 1989 Telerate and Dow Jones approved a definitive merger agreement pursuant to which Dow Jones would acquire all the outstanding shares of Telerate common stock it did not currently own for \$21 per share in cash.

- Dow Jones & Company has held a majority interest in Telerate since 1987 and, prior to this agreement, had invested about \$911 million in Telerate, at an average cost of about \$14.32 per share.
- As a result of the tender offer, which expired at midnight on November 22nd, Dow Jones increased its ownership of Telerate's outstanding common shares from 67% to approximately 91%.
- The tender offer was followed by a merger under which remaining public stockholders of Telerate received \$21 per share in cash for their Telerate shares. The merger took place on January 3, 1990. Telerate now operates as a subsidiary of Dow Jones.

During 1988, Telerate and AT&T formed Global Transactions Services Company (GTS), a joint venture owned by Telerate and AT&T. The venture was established to develop and market electronic transaction services for global financial markets.

- The first of GTS' transaction services, The Trading Service (TTS), became commercially available during mid-1989. TTS is an electronic transaction system for foreign exchange trading.

- Telerate is currently negotiating with AT&T to purchase AT&T's interest in GTS.

Telerate's revenue growth is expected to be 12% to 15% over 1988 levels. Revenue for the nine months ending September 30, 1989 reached \$377.2 million, a 16% increase over \$326.4 million for the same period in 1988. Net income for the period declined from \$70.6 million to \$63 million.

- For the nine month period, international revenue increased nearly 20% to \$175.3 million (46% of revenue), while revenue from the Americas (including Latin America in 1989) increased 12% to \$201.9 million (54% of revenue).
- Expenses increased \$46 million, or 22%, over the same period last year due to \$9.7 in fees associated with the changing of the business management in Switzerland from a distributorship to a Telerate company; increased operating expenses due to the continuing expansion of the central data and communications capabilities required to support larger amounts of data and new products; increased marketing expenses to support new products (including GTS transaction-based services, trading room software, and services for the mortgage-backed securities market).
- Losses related to investments were \$21.8 million, compared to \$2.3 million for the same period last year. GTS-related losses were \$19.3 million.
- Telerate has reported that, as a result of the GTS acquisition, the company will record an additional equity loss of approximately \$23 million in the fourth quarter of 1989. The fourth quarter will also include expenses of approximately \$7 million incurred with its acquisition by Dow Jones. As the result of such loss and expenses, earnings for the fourth quarter of 1989, are expected to be nil. Therefore, for 1989, earnings are expected to be \$0.66 to \$0.69 per share.

Telerate's calendar 1988 revenue reached \$440.4 million, a 31% increase over \$335.8 million for calendar 1987. Net income rose 21%, from \$75.2 million to \$91.2 million.

- During 1987, Telerate changed its fiscal year end date from September 30 to December 31 to conform with Dow Jones'.
- In the financial summary that follows, unaudited results for calendar 1986 have been included for comparison purposes.

TELERATE, INC.
FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	12/88	12/87	12/86	9/86	9/85
Revenue	\$440,370	\$335,753	\$232,277	\$210,355	\$148,486
• Percent Increase from previous year	31%	45%	*	42%	40%
Income before taxes	\$153,747	\$138,755	\$96,900	\$86,914	\$69,241
• Percent Increase from previous year	11%	43%	*	26%	18%
Net income	\$91,172	\$75,217	\$43,222	\$38,751	\$33,399
• Percent Increase from previous year	21%	74%	*	16%	17%
Earnings per share (a)	\$0.96	\$0.79	\$0.49	\$0.44	\$0.38
• Percent Increase from previous year	22%	61%	*	16%	15%

* Percent change between fiscal 1986 and calendar 1986 is not meaningful.

(a) Restated to reflect a 2-for-1 stock split, in the form of a 100% stock dividend, on October 13, 1987.

Telerate management attributed 1988 and 1987 results to the following:

- In North America, revenue increased 26% during 1988 and 31% during 1987. Excluding the effect of the acquisition of CMQ Communications Inc. in October 1987, North America revenue increased by 13% during 1988 and 27% during 1987.
- The decline in the rate of growth reflects a higher than usual cancellation rate caused by problems in the securities markets and the U.S. savings and loan industry.
- The price for Telerate standard services increased in North America by approximately 4% in January 1 in both 1988 and 1987.
- Outside North America, revenue increased 37% during 1988 and 67% during 1987. The decline in the rate of growth reflects both the increased dollar base as well as cutbacks in major financial institutions, primarily in the U.K., where there had been a period of extremely high growth following the deregulation of the London markets.

- The revenue growth was highest in the Asia/Pacific region where Telerate benefited from continued strong demand, as well as the effect of translating Japanese distributor revenue at more favorable exchange rates.
- Telerate's total expenses increased 41% during 1988 and 42% in 1987. In 1988, the rate of growth of expenses exceeded the growth in revenue as the company began a major expansion of its central data and communications capabilities to support larger amounts of data, new product offerings, and a \$3.1 million loss associated with Telerate's share of the loss of GTS.
- Increased capital expenditures during 1988 reflected the purchase of approximately \$21 million of fixed assets acquired by Telerate to be used in delivering GTS services, and investments in associated companies, including GTS, of approximately \$17 million.

Research and development expenditures (excluding costs incurred on the joint venture with AT&T) were \$7 million for calendar 1988, \$4.5 million for calendar 1987, and \$2.9 million for fiscal 1986.

In June 1989, Telerate announced the signing of a five-year contract with Intex Holdings Ltd. for the development, marketing, and distribution of automated market systems for exchanges and exchange members.

- The contract makes formal a joint effort started by Telerate and Intex in 1988. The two companies already have agreements to provide the Chicago Board of Trade and the London International Financial Futures Exchange with electronic order routing service to their trading floors.

During 1989, Telerate acquired FX Development Group, Inc. of Mountain View (CA), a supplier of trading room software products and systems integration services, for an undisclosed amount. The company now operates as FXD/Telerate.

In October 1988, Telerate formed Telerate A.G., a Swiss corporation which is now responsible for Telerate's operations in Switzerland.

In July 1988, Telerate acquired from Ing. C. Olivetti & C. S.p.A. a 46% interest in Radiocor S.p.A., a provider of financial information and stock exchange data in Italy, for an investment of \$5.4 million. Radiocor now operates as Radiocor Telerate S.p.A.

and distributes in Italy all real-time financial information services produced by Telerate and Radiocor.

As of December 31, 1988, Telerate had 1,878 employees worldwide, including 108 assigned to GTS. As of September 30, 1989, Telerate had 2,466 employees worldwide.

Telerate's major competition comes from Reuters Limited.

Key Products and Services

Virtually all of Telerate's 1989 revenue was derived from its electronic information services and associated terminal rentals. The remainder was derived from software analysis tools.

The Telerate Financial Information Network is an on-line system that provides current financial market data to banks, other financial institutions, corporations, government agencies, brokers, and private investors through video display screens located at subscribers' premises throughout the world.

- The number of viewing stations (users) totaled 86,285 on September 30, 1989, an increase of 2,830, or 3%, since June 30, 1989, and an increase of 10,564, or 14%, since December 31, 1988. The number of users increased from 47,800 on December 31, 1986 to 67,800 on December 31, 1987 (including CMQ), and to 75,700 on December 31, 1988.
- The network features direct input from more than 1,900 banks and other financial institutions, including brokers and dealers in the relevant markets, as well as financial news services.
- Telerate offers subscribers access to more than 60,000 video pages of prices, rates, market data, and news covering major financial markets, including the following:
 - U.S. Treasury and federal agency securities
 - Money market instruments
 - Foreign exchange
 - U.S. mortgage market securities
 - Precious metals
 - Financial futures and energy
 - Quotes for publicly traded equity securities

- Financial news services
- Market commentary and analysis
- The Telerate International Quotations service (TIQ), introduced in 1988, offers real-time quotes on more than 90,000 exchange-traded financial instruments, including stocks, options, futures, commodities, bonds, and mutual funds from all North American, London, and other major international exchanges.
- Telerate's Optional Services offer commentary and analysis by various Wall Street experts, as well as money market forecasts, trend information, and fundamental and technical analyses of key markets.

Telerate also offers the following analysis/training tools:

- Tactician™, a microcomputer software-based product for fixed-income investors developed and marketed in conjunction with Giltnet, Ltd. of Australia, is a fundamental analysis system that combines live market data from Telerate's information network with analytics and a five-year historical data base.
 - Analytics include yield curves, spread analysis, horizon analysis, basis trading, option pricing, and position management.
 - Tactician pricing varies by subscriber specifications.
- Compu Trac™ is a microcomputer software product for technical analysis. A library of pre-programmed analysis routines allows the user to test trading ideas for profitability using current and historical data.
- TeleTrac® is a microcomputer-based technical analysis system that captures live price information and transforms it into high-resolution graphic displays.
 - TeleTrac pricing varies by subscriber specifications.
- Telerate Expert, developed by Financial Courseware, uses CD ROM technology to provide financial training programs for novices and professionals.
 - Over 50 courses are currently available, including The Central Authorities, Countertrade & Barter, Dealing - Foreign Exchange Markets, Hedging, Bills of Exchange, and Market Mathematics.

- Pricing per system ranges from \$450 to \$850, depending on the quantity purchased.

Telerate data is available via various delivery systems, from standard Telerate terminals to portable, hand-held receivers.

- The Telerate Access Service (TAS) enables subscribers with an IBM or compatible microcomputer to access Telerate information at home, on the road, or in the office. TAS also provides access to the Dow Jones News/Retrieval^R service and numerous third-party information data bases.
- QuickQuote^R software enables subscribers with an IBM or compatible microcomputer to access a X.25-based service providing live quotations on 75,000 North American trading instruments via dial-up or dedicated circuits.
- Telerate's Matrix Service (formerly Telerate's Broadcast Service) enables subscribers to receive Telerate information via a satellite dish antenna or leased lines and to create "cut and paste" composite pages of information of their own choosing. The service also includes several market-focused data packages (i.e., energy or mortgage data). Matrix is currently available in the U.S. and Europe.
- PDQ (Pocket Display Quotes) and TIPS (Telerate Information Pager Service) are two lightweight, portable, hand-held terminals that receive current prices, rates, and other data. Subscribers living in the New York or Chicago metropolitan areas can use the PDQ to receive Telerate information.
- The Telerate Digital Page Feed, designed for multiterminal users, sends information directly from the Telerate network to a subscriber's in-house computer for redistribution.
- MarketFeed, a consolidated data stream designed to support heavy trading volumes, gives subscribers live information from major international exchanges. The feed includes dynamic updated quotes, trade reports, index levels, market statistics, and market indicators.

The Trading Service, Telerate's joint venture with AT&T, allows foreign-exchange dealers to hold up to four concurrent trading conversations on any combination of currencies and to execute trades.

- Live testing of the service began in April, 1989 with 67 key customers. On June 30, the service had nearly 200 installations in 20 cities worldwide.

The Standard Telerate service and communications charges are \$760 per terminal per month for U.S. subscribers. Additional charges are made for optional services and equipment.

- Subscribers also pay a one-time installation fee of \$1,000 per terminal.
- Certain optional services (such as Quotron quotations or optional Dow Jones newswires) require additional payments directly to the vendor and are not included in Telerate's revenue.
- Prices for international clients vary by location and are generally higher than prices paid by U.S. subscribers.

Industry Markets

Telerate's revenue is derived from banks, other financial institutions, brokers, corporations, government agencies, and private investors.

Telerate's subscribers include virtually all of the world's largest banks and investment banking/brokerage firms.

Geographic Markets

An estimated 54% of 1989 revenue was derived from the Americas (including Latin America) and 46% from international sources.

Approximately 54% of Telerate's 1988 revenue was derived from North America. The remaining 46% of revenue was derived from foreign operations, primarily the U.K., Japan, France, Hong Kong, Australia, Singapore, Germany, and Switzerland.

A three-year financial summary by geographic source follows:

**TELERATE, INC.
THREE-YEAR FINANCIAL SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	12/88		12/87		9/86	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Revenue						
• North America	\$239.2	54%	\$189.4	56%	\$134.9	64%
• Foreign	201.2	46%	146.4	44%	75.5	36%
Total	\$440.4	100%	\$335.8	100%	\$210.4	100%
Income from operations						
• North America	\$74.9	48%	\$83.2	62%	\$57.5	71%
• Foreign	81.4	52%	51.0	38%	23.2	29%
Total	\$156.3	100%	\$134.2	100%	\$80.7	100%

As of December 31, 1988, approximately 60% of the display screens were located in North America and the balance throughout the rest of the world.

Telerate has U.S. offices in Boston, Miami, San Francisco, Los Angeles, and Chicago. Regional sales offices are located in Atlanta, Chicago, Los Angeles, and San Francisco.

The company provides Telerate's services in Canada through its CMQ Communications Inc. subsidiary, which has three sales offices in Canada.

Telerate International Company operates Telerate's business outside North America and has granted exclusive sublicenses to third parties in certain countries.

- In early 1989, Telerate signed a long-term agreement with K.K. Kyodo to distribute Telerate's services in Japan.

**Computer
Hardware and
Software**

Telerate has Perkin-Elmer 32-bit Megamini and Stratus computers installed in Jersey City, at the New York City headquarters, and in its regional offices.

CMQ has Stratus computers installed in Toronto, Vancouver, and Montreal.

The Telerate Network's information data base is processed by the Jersey City computer center. Data is then transmitted via common carrier circuits to the regional computers and to the computers of Dow Jones and The Associated Press in London, Hong Kong, Frankfurt, and Zurich.

- Telerate's current MUX sites are located in Atlanta, Boston, Chicago, Dallas, San Francisco, District of Columbia, Los Angeles, Miami, Jersey City, and New York.
- Clients may use a microcomputer to access Telerate's network via dedicated lines, satellite, FM radio sideband, or direct dial. Telerate terminals may be used for dedicated line access.

COMPANY PROFILE

TELERATE, INC.
One World Trade Center
New York, NY 10048
(212) 938-5200

Neil S. Hirsch, President and CEO
Public Corporation, NYSE
Total Employees: 650
Total Revenue, Fiscal Year End
9/30/85: \$148,486,000

THE COMPANY

- Telerate, Inc., formed in 1969 as Telerate Systems Inc., provides on-line financial market data to securities firms, banks, other financial institutions, and corporations.
 - In April 1983 Telerate made an initial public offering of 4.4 million shares of common stock. Net proceeds were approximately \$81.8 million. As a result of the offering, Exco International, a U.K. holding company, owned approximately 49% of Telerate's common stock. Exco owns two London-based money brokers, the Astley & Pearce and Godsell Groups.
 - During 1984 Telerate repurchased 385,988 of its shares for approximately \$5 million.
 - In August 1985 Dow Jones & Company, Inc. and The Oklahoma Publishing Company purchased 52% of Telerate's common stock for an estimated \$460 million.
- Fiscal 1985 revenue reached \$148.5 million, a 40% increase over \$106.3 million for fiscal 1984. Net income was \$33.4 million compared to \$28.7 million for fiscal 1984. A five-year financial summary follows:

TELERATE, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	9/85	9/84	9/83	9/82	9/81
Revenue (a)	\$ 148,486	\$ 106,285	\$ 63,911	\$ 41,330	\$ 27,275
• Percent increase from previous year	40%	66%	55%	52%	N/A
Income before taxes	\$ 69,241	\$ 58,695	\$ 36,348	\$ 21,573	\$ 13,135
• Percent increase from previous year	18%	61%	68%	64%	87%
Net income	\$ 33,399	\$ 28,651	\$ 20,024	\$ 11,136	\$ 6,594
• Percent increase from previous year	17%	43%	80%	69%	81%
Earnings per share	\$ 0.76	\$ 0.65	\$ 0.48	\$ 0.28	\$ 0.16
• Percent increase from previous year	17%	35%	71%	75%	78%

- (a) Revenue for years prior to fiscal 1985 have been restated to reflect a change in the method of accounting for interest income.
- Telerate management attributes revenue growth to increases in the number of subscriber terminals worldwide as well as increased sales of optional services and equipment.
 - Research and development expenditures were approximately \$1.4 million (1% of revenue) in fiscal 1985, \$1.2 million (1% of revenue) in fiscal 1984, and \$812,000 (1% of revenue) in fiscal 1983.
 - Effective October 1, 1985, Telerate acquired Compu Trac, Inc.; its parent, Computer Assisted Analysis, Inc.; and a related company, Delta Digital Designs, Inc. Terms of the acquisition were not disclosed.
 - Compu Trac provides software and hardware used in the graphic analysis of stocks, futures, stock future indices, and related market items. The software runs on IBM, Apple, and Compu Trac proprietary microcomputers (manufactured by Delta Digital Designs).
 - Compu Trac products are used in 37 countries. Compu Trac has independent representatives in 12 countries and 30 employees in New Orleans.
 - Revenue for the six months ending March 31, 1986 was \$95.1 million, a 41% increase over \$67.6 million for the same period in 1985. Net income was \$17.6 million compared to \$16.8 million for the same period a year ago.

TELERATE, INC.

- Telerate is currently organized into two subsidiaries as follows:
 - Telerate Systems, Inc. is Telerate's operating subsidiary in North America.
 - AP-Dow Jones/TELERATE Company, a partnership 50.4% owned by Telerate, manages the company's operations outside North America.
- Telerate's major competition comes from Reuters Limited.

KEY PRODUCTS AND SERVICES

- One hundred percent of Telerate's fiscal 1985 revenue was derived from remote computing services and associated terminal rentals.
- The Telerate Financial Information Network is an on-line system that provides current financial market data to securities firms, banks, other financial institutions, and corporations through more than 30,000 video display screens located at subscribers' premises throughout the world.
 - Over 1,000 leading banks, securities firms, and other financial institutions currently contribute information to the Telerate Network.
 - Telerate has developed over 20,000 video "pages" of current composite information for particular financial markets, allowing the subscriber to view a summary of key information on a particular market. Certain pages also allow subscribers to compare the most recent prices and quotations contributed by various sources.
 - Information provided to subscribers is automatically updated by Telerate staff and contributors linked to the network via computer or terminal.
 - Significant market developments are signaled to subscribers by audible and visual alerts on their terminals.
- Telerate's basic service includes the following categories of on-line information:
 - U.S. Treasury and federal agency securities: the Telerate Network provides current quotations on most actively traded U.S. Treasury and federal agency issues and reports on significant development in this marketplace, including open market activity by the Federal Reserve System.
 - Price and quotation information from Cantor Fitzgerald Securities Corporation, a government securities broker, is provided along with U.S. Treasury and agency securities quotations from three dealers.

- The results of Treasury auctions and Federal Reserve System and U.S. Treasury statistics are also reported.
- Money market instruments: quotations are provided for all types of major money market instruments (bankers' acceptances, certificates of deposit, commercial paper, repurchase agreements) as well as key interest rate information including federal funds rates and the prime rates of over 100 commercial banks.
- Foreign exchange: the network displays current quotations for key world currencies and Euro-deposit markets as contributed directly by more than 600 banks and brokers worldwide.
- Precious metals: quotations for gold, silver, and other precious metals are contributed by dealers in international bullion centers including New York, London, Zurich, and Hong Kong.
- Mortgage markets: a service designed for mortgage bankers and dealers in mortgage-backed securities and participation certificates reports on pooled mortgage package markets supported by agencies including the Federal National Mortgage Association and Government National Mortgage Association.
- Summary financial news: included in the basic service are summaries of leading foreign exchange and money market news developments as compiled from the Dow Jones News Service and Telerate's newsroom.
- Optional services available through the Telerate Network include:
 - Futures: the network offers financial, currency, energy, and metal futures data, including last-sale prices, quotations, and related contract information on major U.S. and U.K. exchanges.
 - Other financial information: Standard & Poor's Blue List municipal and corporate bond service; cash and futures price data for petroleum and other energy-related products; money market commentaries from independent analysts and services; publicly traded equity securities quotations from Quotron Systems, Inc.
 - News services: various Dow Jones newswires and the Bond Buyer Wire service.
- Telerate's basic service and communications charges are \$540 per terminal per month for U.S. subscribers. Additional charges are made for optional services and equipment (such as printers and additional display monitors). As a result, the average U.S. customer pays approximately \$700 per terminal per month.
- Subscribers also pay a one-time installation fee of \$500 per terminal.

TELERATE, INC.

- Certain optional services (such as Quotron quotations or optional Dow Jones newswires) require additional payments directly to the vendor and are not included in Telerate's revenue.
- Subscribers in some remote locations pay an additional monthly communications charge to cover part of the cost of a dedicated common carrier circuit to the location.
- Prices for international clients vary by location and are generally higher than prices paid by U.S. subscribers.
- In June 1986, as a result of the Compu Trac acquisition, Telerate announced TeleTrac, a front-line trading and analytical tool for dealers, institutional sales representatives, and analysts in the foreign exchange and fixed income money markets.
 - TeleTrac is available on Compu Trac's proprietary microcomputer (manufactured by Delta Digital Designs). The software provides graphic displays of both short- and long-term trends from information accessed on Telerate's network.
 - TeleTrac features include flexible display formats, customization of trading strategies, automated printing of analysis routines, and the ability to test the user's trading system for profitability.
 - Telerate has also developed ongoing training and tutorial courseware on floppy disks as a part of the package to teach the basics of doing technical analysis studies.

INDUSTRY MARKETS

- Over 50% of Telerate's fiscal 1985 revenue was derived from securities and investment banking firms and commercial banks. The remainder of revenue was derived from corporations, mortgage bankers, savings and loans, government agencies, and other financial institutions.
- Telerate subscribers include substantially all of the world's largest banks and investment banking/brokerage firms.

GEOGRAPHIC MARKETS

- Approximately 71% of Telerate's fiscal 1985 revenue was derived from North America. The remaining 29% was derived from foreign operations primarily in the U.K., Hong Kong, Switzerland, Singapore, and Japan.
- As of September 30, 1985, approximately 65% of the over 30,000 display screens installed were located in North America and the balance throughout the rest of the world.
- Telerate has subscribers in 41 countries and over 600 U.S. cities.

TELERATE, INC.

- The company has U.S. regional offices in Atlanta, Chicago, Los Angeles, and San Francisco. Compu Trac is headquartered in New Orleans.
- Telerate services are marketed outside North America by AP-Dow Jones/TELERATE Company.

COMPUTER HARDWARE AND SOFTWARE

- Telerate has 40 Perkin-Elmer 32-bit Megamini computers installed at its New York City headquarters and in its Atlanta, Chicago, Los Angeles, and San Francisco regional offices.
- The Telerate Network's information data base is processed by New York City office computers. Data is then transmitted via common carrier circuits to the regional computers and to the computers of Dow Jones and The Associated Press in London, Hong Kong, Frankfurt, and Zurich.
- Clients may use a microcomputer to access Telerate's network via dedicated lines, satellite, FM radio sideband, or direct dial. Telerate terminals may be used for dedicated line access.

FINANCIAL UPDATE TO PROFILE DATED JUNE 1983*

TELERATE, INC.
One World Trade Center
New York, NY 10048
(212) 938-5200

John H. Gunn, Chairman
Neil S. Hirsch, President and CEO
Public Corporation, NYSE
Total Employees: 397
Total Revenue, Fiscal Year End
9/30/84: \$113,968,000

7650 9/85

TELERATE, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

FISCAL YEAR ITEM	9/84	9/83	9/82	9/81	9/80 (a)
Revenue	\$ 113,968 ^{100,285}	\$ 67,058	\$ 41,600	\$ 27,652	\$ 17,181
• Percent increase from previous year	70%	61%	50%	61%	45%
Income before taxes	\$ 58,695 ✓	\$ 36,348	\$ 21,573	\$ 13,135	\$ 7,036
• Percent increase from previous year	61%	68%	64%	87%	76%
Net income	\$ 28,651 ✓	\$ 20,024	\$ 11,136	\$ 6,594	\$ 3,637
• Percent increase from previous year	43%	80%	69%	81%	75%
Earnings per share	\$ 0.65 ✓	\$ 0.48	\$ 0.28	\$ 0.16	\$ 0.09
• Percent increase from previous year	35%	71%	75%	78%	80%

(a) Telerate's fiscal year was changed from August to September in 1980.

- Telerate's 1984 financial statement consolidates for the first time the activities of AP-Dow Jones/TELERATE Company (a partnership 50.4% owned by Telerate), which has been the exclusive distributor of Telerate services outside the U.S., Canada, and Puerto Rico since October 1, 1983.
- Prior to October 1, 1983, Telerate received 40% of the profits from these overseas operations; this payment of \$2.3 million was included in 1983 revenue.

*Replaces Financial Update dated February 1984

TELERATE, INC.

SOURCE OF REVENUE

- One hundred percent of Telerate's fiscal 1984 revenue was derived from remote computing services.
- Seventy-eight percent of Telerate's fiscal 1984 revenue was derived from the U.S.; the remaining 22% was derived from international sources.

FINANCIAL UPDATE TO HIGHLIGHT DATED JUNE 1983

TELERATE, INC.
One World Trade Center
New York, NY 10048
(212) 938-5200

Neil S. Hirsch, President and CEO
Public Corporation, NYSE
Total Employees: 222
Total Revenue, Fiscal Year End
9/30/83: \$67,058,000

TELERATE, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

FISCAL YEAR ITEM	9/83	9/82	9/81	9/80 (a)	9/79
Revenue	\$ 67,058	\$ 41,600	\$ 27,652	\$ 17,181	\$ 11,809
• Percent increase from previous year	61%	50%	61%	45%	62%
Income before taxes	\$ 36,348	\$ 21,573	\$ 13,135	\$ 7,036	\$ 3,994
• Percent increase from previous year	68%	64%	87%	76%	132%
Net income	\$ 20,024	\$ 11,136	\$ 6,594	\$ 3,637	\$ 2,073
• Percent increase from previous year	80%	69%	81%	75%	114%
Earnings per share	\$ 0.48	\$ 0.28	\$ 0.16	\$ 0.09	\$ 0.05
• Percent increase from previous year	71%	75%	78%	80%	150%

(a) Telerate's fiscal year was changed from August to September in 1980.

SOURCE OF REVENUE

- One hundred percent of Telerate's fiscal 1983 revenue was derived from remote computing services.



COMPANY HIGHLIGHT

TELERATE, INC.
One World Trade Center
New York, NY 10048
(212) 938-5200

Neil S. Hirsch, President and CEO
Public Corporation, NYSE
Total Employees: 178
Total Revenue, Fiscal Year End
9/30/82: \$41,600,000

THE COMPANY

- Telerate, Inc. was formed in October 1980 as a holding company and owner of all the outstanding stock of Telerate Systems Inc., which was founded in 1969 and is now Telerate's major operating subsidiary. Telerate provides on-line financial market data to securities firms, banks, other financial institutions, and corporations.
- Fiscal 1982 revenue reached \$41.6 million, a 50% increase over 1981 revenue of \$27.7 million. Net income rose 69% from \$6.6 million in 1981 to \$11.1 million in 1982. A five-year financial summary follows:

TELERATE, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/82	9/81	9/80 (a)	8/79	8/78
Revenue	\$ 41,600	\$ 27,652	\$ 17,181	\$ 11,809	\$ 7,288
• Percent increase from previous year	50%	61%	45%	62%	57%
Income before taxes	\$ 21,573	\$ 13,135	\$ 7,036	\$ 3,994	\$ 1,723
• Percent increase from previous year	64%	87%	76%	132%	69%
Net income	\$ 11,136	\$ 6,594	\$ 3,637	\$ 2,073	\$ 970
• Percent increase from previous year	69%	81%	75%	114%	65%
Earnings per share	\$ 0.28	\$ 0.16	\$ 0.09	\$ 0.05	\$ 0.02
• Percent increase from previous year	75%	78%	80%	150%	100%

- (a) Telerate's fiscal year was changed from August to September in 1980.

- On April 27, 1983, Telerate made an initial public offering of 4.4 million shares of common stock.
 - Net proceeds of \$82 million are expected to be used for development and implementation of alternative communications systems; purchase of computer equipment; expansion of headquarter facilities; new product design and development; and possible acquisitions of, or investments in, related businesses. A portion of the proceeds will be used to repay a revolving credit loan, which totaled \$7.5 million as of March 31, 1983.
 - As a result of the offering, Exco International, a U.K. holding company, will own approximately 49% of Telerate's common stock. Exco owns two London-based money brokers, the Astley & Pearce and Godsell Groups.
- Revenue for the six months ending March 31, 1983 reached \$29 million, a 55% increase over \$18.7 million for the same period in 1982. Net income rose 68% for the period, from \$4.9 million in 1982 to \$8.2 million in 1983.
- As of September 30, 1982, the company had 178 employees. There are currently over 200 employees.
- Telerate's major competition comes from Reuters Limited. Several other companies, including Quotron Systems, GTE Telenet Information Services, and Bunker Ramo Information Systems, provide financial information services but do not supply extensive information on money market instruments, foreign exchange, and debt securities as available on the Telerate Network.

KEY PRODUCTS AND SERVICES

- One hundred percent of Telerate's fiscal 1982 revenue was derived from remote computing services provided primarily under two-year subscription agreements.
- The Telerate Financial Information Network is an on-line system that provides subscribers with current financial market data. At March 1, 1983, the Telerate Network served more than 3,600 subscriber locations in the U.S. through over 6,800 on-line Telerate-owned video terminals. The Network also serves approximately 1,000 subscriber locations in over 20 countries outside the U.S. through over 2,000 terminals.
 - Over 250 leading banks, securities firms, and other financial institutions currently contribute information to the Telerate Network.
 - Telerate has developed "pages" of current composite information for particular financial markets, allowing the subscriber to view a summary of key information on a particular market. Certain pages also allow subscribers to compare the most recent prices and quotations contributed by various sources.

TELERATE, INC.

- Information provided to subscribers is automatically updated by Telerate staff and contributors linked to the Network via computer or terminal.
- Significant market developments are signaled to subscribers by audible and visual alerts on their terminals.
- Telerate's basic service includes the following categories of on-line information:
 - U.S. Treasury and federal agency securities: the Telerate Network provides current quotations on most actively traded U.S. Treasury and federal agency issues and reports on significant developments in this marketplace, including open market activity by the Federal Reserve System.
 - Price and quotation information from Cantor Fitzgerald Securities Corporation, a government securities broker, is provided along with U.S. Treasury and agency securities quotations from three dealers.
 - The results of Treasury auctions and Federal Reserve System and U.S. Treasury statistics are also reported.
 - Money market instruments: quotations are provided for all types of major money market instruments (bankers' acceptances, certificates of deposit, commercial paper, repurchase agreements) as well as key interest rate information including federal funds rates and the prime rates of over 100 commercial banks.
 - Foreign exchange: the Network displays current quotations for key world currencies and Euro-deposit markets as contributed directly by more than 150 banks and 9 brokers worldwide.
 - Precious metals: quotations for gold, silver, and other precious metals are contributed by dealers in international bullion centers including New York, London, Zurich, and Hong Kong.
 - Mortgage markets: a service designed for mortgage bankers and dealers in mortgage-backed securities and participation certificates reports on pooled mortgage package markets supported by agencies including the Federal National Mortgage Association and Government National Mortgage Association.
 - Summary financial news: included in the basic service are summaries of leading foreign exchange and money market news developments as compiled from the Dow Jones News Service and Telerate's newsroom.

TELERATE, INC.

- Optional services available through the Telerate Network include:
 - Futures: the Network offers financial, currency, energy, and metal futures data, including last-sale prices, quotations, and related contract information on major U.S. and U.K. exchanges.
 - Other financial information: Standard & Poor's Blue List municipal and corporate bond service; cash and futures price data for petroleum and other energy-related products; money market commentaries from independent analysts and services; publicly traded equity securities quotations from Quotron Systems, Inc. and Bridge Data Company.
 - News services: various Dow Jones newswires, the Bond Buyer Wire Service, and the Commodity News Service.
- Telerate's basic service and communications charges are \$540 per terminal per month for U.S. subscribers. Additional charges are made for optional services and equipment (such as printers and additional display monitors). As a result, the average U.S. customer pays approximately \$700 per terminal per month.
 - Subscribers also pay a one-time installation fee of \$500 per terminal.
 - Certain optional services (such as Quotron quotations or optional Dow Jones newswires) require additional payments directly to the vendor and are not included in Telerate's revenue.
 - Subscribers in some remote locations pay an additional monthly communications charge to cover part of the cost of a dedicated common carrier circuit to the location.
 - Prices for international clients vary by location and are generally higher than prices paid by U.S. subscribers.
- Telerate is currently developing a microcomputer-based terminal, the Telerate II. The system will store 100 pages of information in the subscriber's terminal and perform financial calculations and analyses using the market data available through the Telerate Network. Availability in selected cities is scheduled for late 1983.

INDUSTRY MARKETS

- In fiscal 1982 Telerate derived over 90% of its revenue from the banking and finance industry, segmented as follows:

Securities and investment banking firms	35%
Commercial banks	29
Finance companies and corporations	9
Mortgage bankers	9
Savings and loan associations	8
Other (insurance, pension funds, credit unions, government agencies, and other)	<u>10</u>
	100%

- The company's subscribers as of March 1, 1983, include all 100 of the largest U.S. banks and 45 of the 50 largest U.S. investment banking/brokerage firms.

GEOGRAPHIC MARKETS

- A majority of Telerate's fiscal 1982 revenue was derived from the U.S. and the remainder from international sources, primarily Canada, Europe, Hong Kong, Singapore, and Japan.
- A three-year summary of the year-end total number and geographic dispersal of Telerate terminal installations follows:

ITEM \ FISCAL YEAR	FISCAL YEAR		
	9/82	9/81	9/80
U.S.	5,850	4,204	3,009
International	1,648	944	409
Worldwide	7,498	5,148	3,418

- The company has regional offices in Atlanta, Chicago, Los Angeles, and San Francisco.
- In Canada, Combined Market Quotations, Inc. (CMQ) is the exclusive distributor of the Telerate Network. CMQ bears all expenses of distributing the Network in Canada and pays Telerate fees totaling approximately \$40,000 per month. There are over 280 Telerate terminals in Canada.
- The Telerate Network is marketed outside the U.S. and Canada by Dow Jones & Company and The Associated Press (together, APDJ) under an exclusive distribution agreement between Telerate and Dow Jones.
- Terminals are located in more than 20 countries, with the highest concentrations in the U.K., Hong Kong, Switzerland, Singapore, and Japan.

TELERATE, INC.

- APDJ has granted exclusive third-party sublicenses for marketing the Telerate Network in countries including Switzerland, West Germany, Japan, France, and Italy.

COMPUTER HARDWARE AND SOFTWARE

- Telerate has 40 Perkin-Elmer 32-bit Megamini computers installed at its New York City headquarters and in its Atlanta, Chicago, Los Angeles, and San Francisco regional offices.
- The Telerate Network's information data base is processed by New York City office computers. Data is then transmitted via common carrier circuits to the regional computers and to the computers of Dow Jones and The Associated Press in London, Hong Kong, Frankfurt, and Zurich.
- Regional computers relay data to Telerate terminals in subscribers' offices through dedicated common carrier circuits leased primarily from local telephone companies.

COMPANY HIGHLIGHT

TELESIS SYSTEMS CORPORATION

21 Alpha Road
Chelmsford, MA 01824
(617) 256-2300

Patrick de Cavaignac, President
Private Corporation
Total Employees: 200
Total Revenue, Fiscal Year End
3/31/84: \$13.6 million

THE COMPANY

- Telesis Systems Corporation was founded in January 1981 to provide affordable turnkey systems for electronic CAD/CAM applications. These Electronic Design Automation (EDA) systems are provided to discrete manufacturers.
- In July 1982 Telesis began delivery of its first product, a printed circuit (PC) board design system. Revenue for the company's first sales year ending March 1983 reached \$5.1 million. Telesis management believes this represented nearly 20% of all CAD systems shipped for printed circuit board applications during that time period.
- Revenue for fiscal 1984 reached \$13.6 million, a 167% increase from the previous year. Telesis management attributes the company's rapid growth to expanding market demand for high-performance systems that are easy to learn and cost under \$100,000.
- As of March 1984 Telesis had attracted \$13.5 million in investment financing from 19 investment organizations, including Concord Partners (Dillon Read); First Boston Corporation; First Venture Capital (Bank of Boston); G.E. Pension Trust; Harrison Capital (Texaco); Harvard (University) Management Company; IBM Pension Trust; Innoven; John Hancock Venture Capital; Kistler Associates; Menlo Partners; Oxford Ventures; Regional Financial Enterprises; Robertson Coleman; Smith Barney; and Welsh, Carson, Anderson & Stowe.
- Major competitors of Telesis include Computervision, Applicon, and Gerber Scientific.

KEY PRODUCTS AND SERVICES

- One hundred percent of Telesis' fiscal 1984 revenue was derived from turnkey systems for electronic design automation applications and associated support services. Approximately 90% was derived from system sales and 10% from maintenance services.
- Telesis has delivered over 200 turnkey systems to over 100 clients in the electronics manufacturing industry. Applications available on Telesis' systems include the following:

- The intelligent schematic entry application module automates the schematic design process and includes a logical design rules check program to ensure the accuracy of the schematic.
 - Using logic symbols resident in the system library, the operator can draw the schematic on the Telesis graphic screen.
 - Once the drawing is complete, the system will automatically generate the bill of materials and the design net list.
 - The net list, stored on floppy or tape, can be used by the Telesis PC board application package to build the PC board.
- The PC board design and layout software module provides the following functions:
 - Interactive automatic placement and routing algorithms.
 - Grid size in any 1-mil increment.
 - Step-and-repeat features to assist in placement of components.
 - Physical design rules checking.
 - Net list compare functions.
 - Dynamic rubber banding.
- The mechanical design and drafting module (introduced in November 1983) automates layout, detail, and assembly drawings, and provides a basis for automated analysis, layout, and three dimensional capabilities.
 - It standardizes mechanical drawings by ensuring that drawn items reflect uniform sizes and annotations.
 - Users may create a standard symbol library of frequently used parts for fast and accurate throughput of designs. Users may also designate entire sections of layout drawings as symbols for use in subsequent detail and assembly drawings.
 - Drawings are stored on either disk or mag tape.
 - The system interfaces with an optional D- or E-size pen plotter for documentation, including ink or mylar.
 - The software operates in conjunction with the intelligent schematic entry module and the system can be upgraded to include the PC board design software.
- Of the 200 systems currently installed, approximately 180 are for PC board design/schematic entry, 5 for mechanical design/drafting/schematic entry, and 15 for the combined applications of schematic entry, PC board, and mechanical design.

TELESIS SYSTEMS CORPORATION

- There are three basic configurations currently available, as follows:
 - Model T-100, with a three-color display for schematic entry/mechanical design and drafting, is priced from \$55,000.
 - Model T-200, with four- to six-color displays for schematic entry/PC board design and layout, is priced from \$76,500.
 - Model T-300, with four- to six-color displays for schematic entry/PC board design and layout/mechanical design and drafting, is priced from \$91,500.
- All Telesis systems are microprocessor-based, incorporating a DEC 16/32 bit central processor running the RSX-11M operating system with Winchester and floppy disk drives. Other hardware system features include the following:
 - A high-resolution 19-inch color display screen driven by an MC68000-based graphics processor.
 - User interface via the interactive Telesis "Function ScreenTM," a proprietary 12-inch screen that replaces the usual array of input/output devices, computer languages and codes, by accessing a set of English menu selections and messages with a light pen. The menus pace the operator through the design steps and respond to the operator's directions.
 - Peripheral options include a peripheral switch, HP 7580A Pen Plotter, Talos digitizer, IDS 560 matrix printer plotter, mag tape (800 and 1,600 BPI), and NC reader/punch.
- In November 1983 Telesis introduced the Telesis Graphics Processor, an option that incorporates the 10MHz Motorola 68000, the Intel 8085, and the NEC 7220 graphics processors and dual-ported memory architecture to offer advanced features to the company's CAD/CAM systems.
 - Graphics software originally written for the first-generation Telesis system is now run on a dedicated 68000 microprocessor and executed at speeds of up to four times faster than before.
 - The data stored in pages on the Winchester disk can be directly sent to the 68000. The 68000 chip can then act on this data and pass the results to the 7220 microprocessor.
 - The Telesis Graphics Processor can store a picture with a resolution of up to 2,000 x 1,000 pixels.
 - Advanced functions include Roam, Zoom, World Window, and Color Priority.
 - The processor currently provides 512 K-bytes of dual-ported memory.

TELESIS SYSTEMS CORPORATION

- The Telesis Graphics Processor is compatible with any Telesis system, and users can upgrade first-generation systems.
- This graphics processor option is priced at \$7,500. There are currently 40 users.
- Maintenance of Telesis systems is provided by 12 field engineers located in 8 offices across the U.S.
- In February 1984 Telesis signed a \$10 million, two-year distribution agreement with Tokyo Keiki Co., Ltd., to market Telesis systems in Japan.

INDUSTRY MARKETS

- Virtually all of Telesis' fiscal 1984 revenue was derived from the electronics manufacturing industry. A small percent was derived from the data processing services industry.
- Telesis' target market is companies whose own product has a significant electronics content.
- Clients include major Fortune 500 companies, design service bureaus, and electronics companies with under \$100 million per year in revenue.

GEOGRAPHIC MARKETS

- Approximately 90% of Telesis' fiscal 1984 revenue was derived from the U.S. The remaining 10% was derived from foreign sources, including Greece, Israel, Italy, Japan, and Canada.
- The company provides direct sales and service through 19 offices in major electronics market areas throughout the U.S.

COMPUTER HARDWARE AND SOFTWARE

- Telesis has the following computers installed at its headquarters:
 - 1 DEC VAX-11/750, operating under VMS.
 - 1 DEC PDP-11/70, operating under RSX-11M.
 - 1 DEC PDP-11/34, operating under RSX-11M.
 - 20 DEC LSI-11/23 Plus, operating under RSX-11M.

COMPANY PROFILE

INPUT

TELINK SYSTEMS, INC.

(formerly EDI, Inc.)

19650 Club House Road

Suite 202

Gaithersburg, MD 20879

Phone: (301) 670-0811

Fax: (301) 590-9284

President:

John Wilburn

Status:

Private Company

Total Employees:

22

Total Revenue:

\$2,000,000*

Fiscal Year End:

12/31/92

* INPUT estimate

Key Points

- In August 1993, EDI, Inc. changed its name to TELINK Systems, Inc. to more closely identify the company with its successful product line.
- TELINK Systems was the first company to release a microcomputer-based EDI translator. The company has since expanded its TELINK product family to include solutions for UNIX and Tandem minicomputers and mainframes, as well as several specialized products for microcomputers.
- In June 1993, John Wilburn was appointed president of the company. Mr. Wilburn previously was a consultant to the company and later the director of marketing.

**Company
Description**

TELINK Systems markets and supports its TELINK translation software products worldwide. More than 3,000 sites have installed TELINK systems.

TELINK Systems was formed in January 1982 as EDI, Inc. by individuals active in the Transportation Data Coordinating Committee, the industry trade association most responsible for the promotion of electronic data interchange (EDI) concepts. The company's goal was to develop and market EDI software.

- During 1983 and 1984, the company installed six pilot systems under the sponsorship of the National American Wholesale Grocers Association (NAWGA). These initial installations served as beta test sites for product refinement and further development.
- TELINK Systems formally entered the EDI market in January 1985 with the introduction of TELINK.
- During 1985 and 1986, TELINK Systems developed applications for the transportation and banking industries and also for the Department of Defense. The company has since expanded its markets to other industries and internationally.
- In 1988, TELINK/Tandem was released for Tandem NonStop systems using the Guardian operating system.
- In 1989, TELINK Systems developed a system to process the 602 Tariff transaction set for the Military Traffic Management Command (MTMC). The project included an artificial intelligence capability to verify the data and act accordingly.
- During 1990, TELINK/osa (open systems architecture) was released for the Unisys 6000 series of UNIX-based systems. TELINK/osa was interfaced with EaDIPlus mapping software from Unisys.
- In 1990, software tools were developed to enhance the quality control for producing and updating TELINK systems.
- In 1992, TELINK/sa, a "cafeteria style" system, was announced for the standalone user.

Strategy

TELINK Systems' strategy is to make its TELINK product simpler, more user friendly, and capable of being bundled with other application packages.

Financials

INPUT estimates TELINK Systems' 1992 revenue was \$2 million, a 25% increase over 1991 revenue of \$1.6 million.

Market Financials

TELINK Systems markets its software products across many industries, including banking, government, grocery, discrete and process manufacturing, retail trade, transportation, and warehousing.

Geographic Markets

Approximately 90% of TELINK Systems' revenue is derived from the U.S. and the remaining 10% from Canada, Europe, and the Pacific Rim.

Employees

As of August 1993, TELINK Systems had 22 employees, segmented as follows:

Marketing and sales	3
Customer support	2
Research and development	13
General and administrative	4
	22

Key Products and Services

TELINK Systems' principal product, TELINK/micro, is microcomputer-based and supports ANSI X12, UCS, WINS, and TDCC (air, motor, ocean, rail) standards.

- Hardware/software and communications requirements are as follows:
 - Hardware/software: IBM PC AT or compatible, 640 K memory, MS-DOS 3.1 or later
 - Communications: 2,400/4,800/9,600 baud autodial/autoanswer bisynchronous, 1,200 to 19,200 baud autodial/autoanswer asynchronous, X.32 (dial-up X.25)
- TELINK/micro functions include:
 - Menu-driven operation
 - Print routines
 - By-product reports
 - Data control features
 - Archiving
 - Supporting utility routines

- Recovery (in the event of power loss)
 - User control over specifying the system configuration
 - Automatic sequencing of various functions in an unattended mode
 - Error-checking functions
 - Security provisions
 - Resiliency and recovery
 - Automatic unattended operation based on a calendar and clock provided with TELINK and set by the user
 - System configuration module for adapting TELINK to the user environment.
 - User-defined menu module to integrate TELINK with other user software
- TELINK/micro is priced at \$1,250, plus \$300 per transaction set and \$450 per communications interface. The annual maintenance fee is 18% of the current purchase price for standards, software, documentation updates, and hotline services.

TELINK/sa has all of the features of TELINK/micro except for a host interface. TELINK/sa is available for a core price of \$450, plus \$300 per transaction set and \$450 per communication interface.

Tandem TELINK, introduced in May 1988, is a mainframe software product based on Tandem architecture.

In March 1991, TELINK Systems released TELINK/osa, which has been designed for UNIX environments and is now available on the Unisys U6000 series system.

During 1991, TELINK Systems introduced TELINK/602, a specialized product designed to help carriers automate the process of generating a Tender Offer for the U.S. Military Traffic Management Command (MTMC). TELINK/602 uses artificial intelligence to assure data accuracy and to ensure compliance with the specifications of MTMC.

Marketing & Sales

The company sells directly to users and through a worldwide network of value-added resellers, systems integrators, and distributors, including E.G. Systems House, J. Computer Systems, and Foxware.

Alliances

TELINK Systems is a marketing associate of Unisys Corporation.

COMPANY PROFILE

TELOS CORPORATION

3420 Ocean Park Boulevard
Santa Monica, CA 90405
(213) 450-2424

Lin Conger, Chairman
Howard H. Metcalfe, President and CEO
Public Corporation, OTC
Total Employees: 1,600 (3/88)
Total Revenue, Fiscal Year End
3/31/88: \$100,801,000
Information Services Revenue:
\$80,250,000

The Company

Telos Corporation was founded in 1969 as Telos Computing, Inc. Professional services provided by the company include the design, development, and support of software on a project and/or consulting basis for defense and space systems and commercial applications. Telos also provides computer and peripheral hardware maintenance services (primarily at U.S. government installations), operates a computer depot repair facility, and sells computer equipment and related engineering services.

Fiscal 1988 revenue reached \$100.8 million, a 23% increase over fiscal 1987 revenue of \$81.7 million. Net income rose 32%, from \$2.8 million in fiscal 1987 to over \$3.7 million in fiscal 1988. A five-year financial summary follows:

**TELOS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	3/88	3/87 (a)	3/86	3/85	3/84
Revenue	\$100,801	\$81,719	\$69,222	\$54,836	\$36,745
• Percent increase from previous year	23%	18%	26%	49%	28%
Income from continuing operations before taxes	\$6,133	\$5,498	\$3,033	\$2,384	\$1,148
• Percent increase from previous year	12%	81%	27%	108%	52%
Net income (b)	\$3,735	\$2,828	\$1,077	\$1,111	\$196
• Percent increase (decrease) from previous year	32%	163%	(3%)	467%	20%
Earnings per share (b)	\$0.98	\$0.76	\$0.36	\$0.42	\$0.08
• Percent increase (decrease) from previous year	29%	111%	(14%)	425%	14%

- (a) Financials for fiscal 1987 have been restated to reflect the the pooling-of-interests acquisition of DMA, Inc. in October 1987. Periods prior to 1987 have not been restated since operations of DMA were not material.
- (b) Includes net income (loss)/earnings (loss) per share of \$89,000/\$0.02, \$66,000/\$0.02, (\$465,000)/(\$0.16), (\$150,000)/(\$0.06), and (\$437,000)/(\$0.17) for fiscal 1988, 1987, 1986, 1985, and 1984, respectively, from Telos' discontinued microcomputer software products operations.

Revenue for the six months ending September 30, 1988 reached \$56.3 million, an 18% increase over \$47.6 million for the same period in 1987. Net income for the period declined 15%, from \$2.2 million to \$1.9 million.

Acquisitions/divestitures made by Telos include the following:

- In October 1988, Telos completed the acquisition of Telecommunication Science Associates, Inc. (TCS) for an undisclosed sum of cash.
- Founded in 1977, TCS performs communications engineering services, mainly for the U.S. Navy in San Diego. TCS' revenue for its fiscal year ending April 30, 1988 was approximately \$3 million.

- TCS now operates as a wholly owned subsidiary of Telos within the Consulting Services division.
- In October 1987, Telos acquired DMA, Inc. of Amery (WI) for 198,315 shares of Telos common stock in a pooling-of-interests transaction.
 - DMA operates a depot repair facility for computer hardware and sells computer equipment and related engineering services. DMA had revenue of approximately \$2.9 million at the time of the acquisition.
 - DMA, which contributed approximately \$2.8 million to Telos' fiscal 1988 revenue, now operates as a wholly owned subsidiary of Telos within the Hardware Services segment.
- In June 1987, Telos sold a majority of the assets of its microcomputer software products business to Marvelin Corporation for \$60,000.
 - Telos began offering microcomputer software products during fiscal 1983. The company discontinued this business segment effective March 31, 1986.
 - Revenues from this segment were \$62,827, \$371,461, and \$470,924 for fiscal 1988, 1987, and 1986, respectively.

Telos is divided into two business segments as follows:

- The Software Services segment provides a range of professional services through the following operating divisions:
 - The Federal Systems division provides software design, development, and support services primarily for U.S. defense programs. This division contributed approximately 32% (\$32.2 million) to Telos' fiscal 1988 revenue.
 - The Aerospace Systems division offers services related to the development of software systems that control, track, and monitor space vehicles. This division contributed approximately 14% (\$14.0 million) to Telos' fiscal 1988 revenue.
 - The Consulting Services division provides computer software engineers, systems analysts, and programmers on a contract basis to its clients. This division contributed approximately 33% (\$32.7 million) to Telos' fiscal 1988 revenue.

- The Systems Development division provides custom software development services and performs study projects, primarily to non-government clients to enhance Telos' credentials for capturing larger opportunities and the launching of new divisional businesses. This division contributed 1% to Telos' fiscal 1988 revenue.
- The Hardware Services segment is organized into two units as follows:
 - The Field Engineering division provides third-party hardware maintenance services. This division contributed approximately 17% (\$17.8 million) to Telos' fiscal 1988 revenue.
 - DMA, Inc. provides depot repair services, resells hardware, and sells custom-made equipment. This subsidiary contributed approximately 3% (\$2.8 million) to Telos' fiscal 1988 revenue.
- A three-year financial summary by business segment follows:

TELOS CORPORATION
THREE-YEAR FINANCIAL SUMMARY
 (\$ thousands)

ITEM	FISCAL YEAR					
	3/88		3/87		3/86	
	\$	PERCENT OF TOTAL	\$	PERCENT OF TOTAL	\$	PERCENT OF TOTAL
Revenue						
• Software Services	\$80,250	80%	\$67,649	83%	\$60,662	88%
• Hardware Services	20,551	20%	14,070	17%	8,560	12%
	\$100,801	100%	\$81,719	100%	\$69,222	100%
Operating profit from continuing operations						
• Software Services	\$3,404	55%	\$2,682	49%	\$1,844	53%
• Hardware Services	2,787	45%	2,832	51%	1,645	47%
	\$6,191	100%	\$5,514	100%	\$3,489	100%

As of March 1988, Telos had approximately 1,600 employees, segmented as follows:

Marketing/sales	22
Professional and technical	1,525
Computer operations	3
General and administrative	<u>50</u>
	1,600

There are currently over 1,700 employees.

Major competitors in the professional services area include Computer Sciences Corporation, Mini-Systems, BDM, Logicon, TRW, Planning Research, Computer Horizons, and Unisys. The company also competes with numerous vendors in the area of hardware maintenance, including IBM, DEC, Control Data, and Atlantic Bell.

Key Products and Services

Approximately 80% of Telos' fiscal 1988 revenue was derived from its various professional services activities. The remaining 20% was derived from hardware maintenance and related services.

The Federal Systems division, which contributed 32% to Telos' fiscal 1988 revenue, supports the U.S. Army under prime contracts and subcontracts involving the development and maintenance of automated battlefield systems.

- Telos provides software services to the U.S. Army for field artillery and tactical communications systems under the U.S. Army's Life Cycle Software Engineering (LCSE) program. Telos provides services to the Army at its LCSE centers for fire support at Fort Sill and Lawton (OK) and tactical communications at Fort Monmouth (NJ).
- Currently, Telos has approximately 500 staff members conducting LCSE-related services for the Army.
- Fort Sill contracts generated approximately \$16.9 million in revenue during fiscal 1988. Fort Monmouth contracts generated about \$12.1 million during fiscal 1988.

The Aerospace Systems division, which contributed 14% to total revenue in fiscal 1988, develops software systems that control, track, and monitor space vehicles, including deep space probes and earth orbital satellites. Telos has been providing these services since 1975.

- Activities have included software engineering and development for telemetry processing, orbit determination, satellite path calculation, spacecraft command and control, monitoring of spacecraft health and status, scientific instrument data processing, spacecraft testing, satellite communications, and spacecraft simulation.
- Most of Telos' space systems work has been performed for the Jet Propulsion Laboratory (JPL), a U.S. NASA center operated by the California Institute of Technology in Pasadena (CA).

The Consulting Services division, which contributed 33% to Telos' fiscal 1988 revenue, provides software engineers, systems analysts, and programmers on a contract basis to its clients.

- Services provided include concept formulation, design, specification, development, testing, documentation, and maintenance.
- Telos provides these services to more than 200 different clients from 14 regional offices located throughout California and in Boston, Colorado Springs, Houston, Huntsville, Phoenix, Seattle, and Washington, D.C.
- During fiscal 1988, military-aerospace work represented 74% and commercial work represented about 26% of Telos' Consulting Services revenue.
 - In the area of military-aerospace work, Telos has provided personnel to large defense aerospace contractors to assist in their development of defense systems for electronic warfare, air defense, secure communications, tactical systems, weapons control, intelligence, air surveillance, satellite-borne payloads, missile systems, navigation, simulation, signal processing, anti-submarine warfare, and message processing. Clients include Boeing, Hughes, Lockheed, and McDonnell Douglas.
 - Among its commercial activities in this area, Telos has supplied programmers to the City and County of Sacramento (CA) since February 1981 to assist in the development of criminal justice information systems, financial management systems, and data base management systems. Telos has provided personnel to the State of California to assist in its development of software systems for rehabilitation, public employee retirement, and housing systems. Telos has also

provided personnel for programs for Los Angeles County for the County Assessor's office, the Urban Renewal office, and County hospitals.

- Short-term services provided to JPL accounted for about 7% of Telos' fiscal 1988 Consulting Services revenue.

During fiscal 1988, Telos' Systems Development division was involved primarily in two projects as follows:

- Telos has developed connectivity software between Apple Macintosh and DEC VAX systems.
- In September 1987, Telos was awarded a contract from JPL to provide systems integration, software maintenance, and administrative support services at the U.S. Army's and Air Force's Joint Tactical Fusion Program Management Office in McLean (VA). Telos plans to combine this contract with similar new business to form a new division, Information Systems, to provide office automation services primarily for civilian federal agencies.

Through the Hardware Services segment, Telos provides third-party hardware and peripheral maintenance services, primarily at U.S. government installations, and depot repair and resale of hardware and associated custom engineering.

- Maintenance services are provided at approximately 80 locations under more than 450 contracts in 36 states and the District of Columbia.
- As of March 31, 1988, Telos employed approximately 218 technicians in this segment.
- During fiscal 1988, Telos was awarded a \$11.7 million contract from the Defense Logistics Agency in Washington, D.C. and opened twelve sites to support the contract.
- Other customers include the Federal Aviation Administration, Postal Service, Department of Treasury, Walter Reed Army Medical Center, Bethesda Naval Hospital, Department of Transportation, Social Security Administration, Naval Oceanographic Center, International Trade Commission, and National Institutes of Health.

Industry Markets

Approximately 87% of Telos' fiscal 1988 revenue was derived from the U.S. government, primarily agencies of the Department of Defense, and subcontracts with government prime contractors. The remaining 13% of revenue was derived from state and local government and commercial clients.

During fiscal 1988, agencies of the U.S. Army contributed 35% to revenue and Jet Propulsion Laboratory contracts contributed nearly 22% to revenue. No other client accounted for more than 4% of revenue.

Geographic Markets

One hundred percent of Telos' fiscal 1988 revenue was derived from U.S. clients.

Telos has locations in 37 states and the District of Columbia.

Computer Hardware and Software

Telos has the following computers installed at its Santa Monica headquarters:

- 1 DEC MicroVAX II, VMS.
- 1 Perkin-Elmer 3254, OS/32.
- Approximately 50 Apple and IBM microcomputers.

COMPANY PROFILE

TELOS CORPORATION

3420 Ocean Park Boulevard
Santa Monica, CA 90405
(213) 450-2424

Lin Conger, Chairman
Howard H. Metcalf, President and CEO
Public Corporation, OTC
Total Employees: 1,400
Total Revenue, Fiscal Year End
3/31/87: \$78,787,000
Information Services Revenue:
\$67,649,000

THE COMPANY

- Telos Corporation was founded in 1969 as Telos Computing, Inc. The company specializes in providing professional services, including the design of military and aerospace real-time systems, custom applications software development, contract programming, and custom turnkey systems. The company also offers third-party maintenance services.
- Telos began offering microcomputer software products in fiscal 1983. The company discontinued this business segment as of March 31, 1986. Microcomputer software sales contributed approximately \$470,924, \$1.7 million, and \$410,740 to fiscal 1986, 1985, and 1984 revenues, respectively.
- Fiscal 1987 revenue reached \$78.8 million, a 14% increase over fiscal 1986 revenue of \$69.2 million. Net income increased 140%, from \$1.1 million in fiscal 1986 to \$2.6 million in fiscal 1987. A five-year financial summary follows:

TELOS CORPORATION

TELOS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/87	3/86	3/85	3/84	3/83
Revenue	\$ 78,787	\$ 69,222	\$ 54,836	\$ 36,745	\$ 28,607
• Percent increase from previous year	14%	26%	49%	28%	N/A
Income before taxes	\$ 2,520	\$ 1,542	\$ 1,261	\$ 633	\$ 430
• Percent increase from previous year	63%	22%	99%	47%	N/A
Net income	\$ 2,586	\$ 1,077	\$ 1,111	\$ 196	\$ 164
• Percent increase (decrease) from previous year	140%	(3%)	467%	20%	N/A
Earnings per share	\$ 0.73	\$ 0.36	\$ 0.42	\$ 0.08	\$ 0.07
• Percent increase (decrease) from previous year	103%	(14%)	425%	14%	N/A

- Revenue for the six months ending September 30, 1987 was \$46.1 million, a 19% increase over revenue of \$38.7 million for the same period in 1986. Net income reached \$2.2 million, a 47% increase over \$1.5 million for the same period in 1986.
- In October 1987, Telos acquired DMA, Inc. of Amery (WI). DMA markets computer equipment and provides third-party hardware maintenance services. DMA had revenue of approximately \$3 million at the time of acquisition. It now operates as a wholly-owned subsidiary of Telos within the Hardware Services segment.
- Telos is divided into two business segments as follows:
 - The Software Services segment is composed of four business divisions: Defense Systems, Space Systems, Consulting Services, and Commercial Systems.
 - The Defense Systems division provides computer software design, development, and support services primarily for United States defense programs.
 - The Space Systems division offers services related to the development of software systems that control, track, and monitor space vehicles.

TELOS CORPORATION

- The Consulting Services division provides facilities management on a contract basis to its clients.
- The Commercial Systems division offers custom software development, primarily to non-government clients.
- Through the Hardware Business segment Telos provides third-party computer hardware and peripheral equipment maintenance services, primarily at U.S. government installations.
- As of March 1987, Telos employed approximately 1,400 persons. Employees segmented by category is estimated as follows:

Marketing/sales	140
Professional and technical	1,162
Computer operations	14
General and administrative	<u>84</u>
	1,400
- Major competitors include Computer Sciences Corporation, Sterling Software, Calculon, and Mini Systems.

KEY PRODUCTS AND SERVICES

- Telos' fiscal 1987 revenue was derived approximately as follows:

	Revenue (\$ millions)	Percent of Total
Professional Services		
• Government contract programming	\$38.1	48%
• Consulting services	29.2	37
• Commercial contract programming	<u>0.5</u>	<u>1</u>
Subtotal	\$67.8	86%
Hardware Maintenance	<u>\$11.0</u>	<u>14%</u>
	\$78.8	100%

- During fiscal 1987 revenues generated by government defense and aerospace projects accounted for 48% of total revenue. The projects include the following:
 - Development software and training for Army Field Artillery Systems. This project generated approximately 21% of Telos' fiscal 1987 revenue.

TELOS CORPORATION

- As of March 31, 1987, approximately 400 employees are involved with this contract.
- Software development and implementation services for Tactical Communications Systems, which generated approximately 10% of Telos' fiscal 1987 revenue.
 - As of March 31, 1987, 174 employees were assigned to this contract.
- Other software system development for several major U.S. Air Force programs, including Data System Modernization, Defense Meteorological Satellite Program, Single Channel Transponder Injection System, and G/AIT.
- The development of software systems for telemetry, tracking, commanding, and ground system communications for the Jet Propulsion Laboratory (JPL) related to the Deep Space Network. This contract generated approximately 5% of Telos' fiscal 1987 revenue.
- Software development for Voyager, Galileo, Active Magnetosphere Particle Tracer Explorer, and Ulysses for JPL.
 - As of March 31, 1987, 43 employees were engaged in this contract.
- Services involving software production management control activities for JPL.
 - As of March 31, 1987, 34 employees were engaged in the project.
- Telos' fiscal 1987 consulting services revenue accounted for 37% of total revenue.
 - Telos offers professional facilities management services by providing computer software engineers, systems analysts, and programmers on a contract basis to its clients.
 - The services include engineering designing, developing and testing of software systems for both military aerospace clients (approximately 75% of fiscal 1987 consulting services revenue) and commercial clients (approximately 25% of fiscal 1987 consulting services revenue).
 - Telos provides its consulting services to approximately 100 clients from ten regional offices located in California, Massachusetts, Texas, Washington, and the Washington, D.C. metropolitan area.

TELOS CORPORATION

- As of March 31, 1987, 391 employees and 3 independent contractors were engaged in consulting services.
- Less than 1% of Telos' fiscal 1987 revenue was derived from the commercial systems area.
 - The projects consist of developing a Macintosh to DEC All-in-One interface, a Macintosh to VAX drawing tool, and a terminal emulation for the VAX on the Macintosh.
- Telos' Hardware Services segment provides third-party hardware maintenance for a variety of computer peripheral equipment.
 - Services may be provided on-site or on-call. Installation planning, spares provisioning, and integrated logistics support are offered.
 - Maintenance services are provided at approximately 75 government sites under 350 contracts.
 - As of March 31, 1987, Telos employed approximately 134 technicians in this business segment.

INDUSTRY MARKETS

- Approximately 89% of Telos fiscal 1987 revenue was derived from the U.S. government. The remaining 11% was from the computer industry and other commercial clients. A further breakdown of Telos' fiscal 1987 revenue is estimated as follows:

U.S. Army	37%
Military - Aerospace	28
NASA	19
Commercial aerospace	8
Other government	7
Other commercial	<u>1</u>
	100%

- Commercial clients include Comptek Research, Inc., Hughes Aircraft Company, Litton Industries, Inc., Lockheed Corporation, Norden Systems, Inc., Raytheon Company, Sanders Associates, and TRW Inc.
- Except for the U.S. Army and NASA, no other single customer accounted for more than 5% of Telos' fiscal 1987 revenue.

TELOS CORPORATION

GEOGRAPHIC MARKETS

- One hundred percent of Telos' fiscal 1987 revenue was derived from the U.S.
- Telos has branch offices in Bountiful and Salt Lake City (UT); Boston; Houston; Lawton (OK); Seattle; Fort Wayne; Washington, D.C.; and Bakersfield, Fullerton, Glendale, San Diego, Santa Barbara, Santa Clara, and Sacramento (CA).
- Field offices are located at various client sites across the U.S.

COMPUTER HARDWARE AND SOFTWARE

- Telos has the following computers installed at its Santa Monica headquarters:
 - 1 DEC MicroVAX II, VMS.
 - 1 HP 1000E; RTE-6/VM; 1 HP A900, RTE-A.
 - 1 Perkin-Elmer 3254, OS/32.
 - Approximately 30 microcomputers, including the following models: Apple II, III, Macintosh, and IBM PC and PC/XT.

COMPANY PROFILE

TELOS CORPORATION
3420 Ocean Park Boulevard
Santa Monica, CA 90405
(213) 450-2424

Lin Conger, President and CEO
Private Corporation
Total Employees: 1,075
Total Revenue, Fiscal Year End
3/31/85: \$56,339,000
Computer Services Revenue:
\$50,500,000

THE COMPANY

- Telos Corporation was founded in 1969 as Telos Computing, Inc. The company specializes in providing professional services, including the design of military and aerospace real-time systems, custom applications software development, contract programming, and custom turnkey systems. In fiscal 1983 Telos began offering microcomputer software. The company also offers third-party maintenance services.
- Fiscal 1985 revenue reached \$56.3 million, a 52% increase over fiscal 1984 revenue of \$37.2 million. Net income increased 503%, from \$195,744 in fiscal 1984 to \$1,181,000 in fiscal 1985. A five-year financial summary follows:

TELOS CORPORATION

TELOS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/85 (a)	3/84	3/83	3/82	3/81
Revenue	\$ 56,339	\$ 37,156	\$ 28,847	\$ 23,954	\$ 17,959
. Percent increase from previous year	52%	29%	20%	33%	43%
Income before taxes	\$ 2,044	\$ 270	\$ 221	\$ 835	\$ 429
. Percent increase (decrease) from previous year	657%	22%	(74%)	95%	6%
Net income	\$ 1,181	\$ 196	\$ 164	\$ 456	\$ 235
. Percent increase (decrease) from previous year	503%	20%	(64%)	94%	4%
Earnings per share (b)	\$ 1.46	\$ 0.26	\$ 0.23	\$ 0.64	\$ 0.37
. Percent increase (decrease) from previous year	462%	13%	(64%)	73%	(12%)

(a) Fiscal 1985 revenue based on 11 months actuals plus budget for March.

(b) Restated to reflect July 1983 five-for-one stock split.

- Telos management attributes increases in net income to the reduction in investments in the development and marketing of microcomputer software products and to the development of increased business with the federal government.
- Management projects fiscal 1986 revenue will reach \$73 million, with estimated net income of \$2.5 million for the same period.
- Telos is divided into five operating units as follows:
 - Telos Consulting Services division performs contract programming on a time and materials basis and accounted for 40% of the company's fiscal 1985 revenue.
 - Telos Federal Systems division provides professional services for the federal government and large defense contractors, and contributed 42% of fiscal 1985 revenue.
 - Telos Systems Software division designs custom turnkey systems, systems and applications software (primarily for satellite ground

TELOS CORPORATION

systems), and management information systems for IBM mainframe installations. This division contributed approximately 5% of fiscal 1985 revenue.

- Telos Field Services division provides third-party hardware maintenance services and contributed 10% of fiscal 1985 revenue.
- Telos Software Products is a wholly-owned subsidiary that provides software packages for microcomputers. This subsidiary contributed 3% of fiscal 1985 revenue.
- As of March 31, 1985, Telos had 1,075 employees, segmented as follows:

Marketing/sales	74
Professional and technical	954
Computer operations	3
General and administrative	<u>44</u>
	1,075

- Major competitors by division/subsidiary include:
 - Telos Consulting Services: In the Los Angeles area, XXCAL and Mini Systems. Other competition varies regionally.
 - Telos Federal Systems: Computer Sciences Corporation, Informatics, and Calculon.
 - Telos Software Products: Microsoft, Odesta, and Software Publishing.
 - Telos Systems Software: SAI and Contel.

KEY PRODUCTS AND SERVICES

- Telos' fiscal 1985 revenue was derived approximately as follows (\$ millions):

	<u>Revenue</u>	<u>Percent of Total</u>
Professional services	\$48.7	87%
. Custom software systems (\$26.3)		
. Contract programming (\$22.4)		
Software products	1.8	3
Hardware Maintenance	<u>5.5</u>	<u>10</u>
	\$56.0	100%

- Telos has provided custom systems and applications software development for aerospace, scientific, and business clients in almost all computer languages.

Hardware experience includes most military and commercial mainframes as well as minicomputer and microprocessor systems.

- Specific areas of expertise include command, control, and communications; aeronautics and avionics; real-time control and monitoring; data reduction; and defense-related programs.
- Typical projects include:
 - Software development for Voyager and Galileo space probes for the Jet Propulsion Laboratory.
 - Design and implementation of spacecraft vehicle command software and telemetry systems for the RCA Commercial Satellite Program.
 - Development of software and training for Army Field Artillery Systems.
 - Development of data base management systems, language processors, and operating system enhancements for hardware vendors.
 - Development of the VFMED Training Simulator turnkey system for the U.S. Army.
- Recent contracts awarded to Telos for professional services include the following:
 - In September 1983 Telos was awarded a three-year contract valued at over \$23 million with the U.S. Army's Communications-Electronics Command of Fort Monmouth (NJ) for software support of the Field Artillery Tactical Data Systems (FATDS) at Fort Sill (OK).
 - Telos Federal Systems division has provided professional services to the Army's FATDS Software Support Group since 1976 and currently has over 300 employees at Fort Sill.
 - Under the new contract, Telos federal Systems continues the development, modification, and maintenance of several Field Artillery Battlefield Automation Systems and provides advanced training programs to support these systems.
 - Under an additional \$9 million, three-year contract signed in September 1983 with the Army's Communications-Electronics Command, Telos will provide postdeployment software support for computerized military communications systems.
 - Staffing for this new operation will total 40 engineers, programmers, and administrative personnel.

TELOS CORPORATION

- Telos Federal Systems will perform systems and software support for a variety of battlefield communications systems, providing voice and data communications using ground, airborne, and satellite networks.
- Work was completed on the software contract for Hughes Helicopter's training simulator, and Telos now has a follow-on contract for maintenance.
- Subsequent contract awards, totaling over \$12 million, include additional FATDS and AFATDS work for the U.S. Army and Magnavox, satellite work for Texas Instruments and RCA American Communications, and Deep Space Network software for the Jet Propulsion Laboratory's Voyager and Galileo space probes.
- Telos Software Products develops microcomputer software products that are marketed either by Telos or hardware manufacturers. Examples of current products include the following:
 - TeloSchool^{T.M.}, introduced in 1983, is a student record-keeping package for primary schools. Currently available for Apple II microcomputers, the software is priced at \$549 and is marketed by Telos.
 - Filevision^{T.M.}, introduced in 1984, is a graphic filing system. Currently available for the Apple Macintosh, the software is priced at \$195 and is marketed by Telos.
- Telos' Field Services division provides third-party hardware maintenance on a wide variety of computers including IBM, DEC, and National Advanced Systems. Virtually all brands of peripherals, minicomputers, and microprocessors are serviced. Most field services clients have equipment from a variety of vendors.
 - Services may be provided on-site or on-call. Installation planning, spares provisioning, and integrated logistics support are offered.
 - In Fall 1984 the division won 63 contracts for maintenance at dozens of government sites. These contracts, totaling over \$2.5 million, are for both preventive and remedial maintenance and cover Apple, CDC, DEC, HP, IBM, NAS, STC, TELEX, UNIVAC, and 3M equipment.

INDUSTRY MARKETS

- Telos' fiscal 1985 revenue was derived approximately as follows:

Commercial aerospace and defense	38%
Department of Defense	26
NASA	12
Computer industry	6
Other commercial	<u>18</u>
	100%

TELOS CORPORATION

- Commercial clients include Apple Computer, Boeing, GTE, Hughes Aircraft, Hughes Helicopters, IBM, ITT, Litton Industries, Magnavox, Martin Marietta, RCA, System Development Corporation, Western Union, and Xerox.

GEOGRAPHIC MARKETS

- One hundred percent of Telos' fiscal 1985 revenue was derived from the U.S. A further breakdown by region follows:

Western	53%
South Central	30
North Central	7
Eastern	<u>10</u>
	100%

- Telos has branch offices in Bountiful and Salt Lake City (UT); Boston; Colorado Springs; Austin and Houston; Lawton (OK); Seattle; Fort Wayne; Tampa; Washington, D.C.; and Fullerton, Glendale, San Diego, Santa Barbara, and Santa Clara (CA).
- Field offices are located at various client sites across the U.S.

COMPUTER HARDWARE AND SOFTWARE

- Telos has the following computers installed at its Santa Monica headquarters:
 - 1 Datapoint 6600, DOS, Datashare.
 - 1 DEC VAX-11/730, VMS.
 - 1 HP 1000E, RTE-6/VM; 1 HP A900, RTE-A.
 - 1 Perkin-Elmer 3230, OS/32.
 - 30 microcomputers, including the following models: Apple II, III, Macintosh; and IBM PC, PC XT, and PC jr.

COMPANY HIGHLIGHT

TELOS CORPORATION
3420 Ocean Park Boulevard
Santa Monica, CA 90405
(213) 450-2424

Lin Conger, President
Private Corporation
Total Employees: 668
Total Revenue, Fiscal Year End
3/31/83: \$28,847,200
Computer Services Revenue:
\$26,840,183

THE COMPANY

- Telos Corporation was founded in 1969 as Telos Computing, Inc. The company specializes in providing professional services, including the design of military and aerospace real-time systems, custom applications software development, contract programming, and custom turnkey systems. In fiscal 1983 Telos began offering microcomputer software. The company also offers third-party maintenance services.
- Fiscal 1983 revenue reached \$28.8 million, a 20% increase over fiscal 1982 revenue of nearly \$24 million. Net income declined 64%, from \$455,663 in fiscal 1982 to \$163,586 in fiscal 1983. A five-year financial summary follows:

TELOS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/83	3/82	3/81	3/80	3/79
Revenue	\$ 28,847	\$ 23,954	\$ 18,000	\$ 12,600	\$ 8,600
• Percent increase from previous year	20%	33%	43%	47%	76%
Income before taxes	\$ 221	\$ 835	\$ 429	\$ 404	\$ 234
• Percent increase (decrease) from previous year	(74%)	95%	6%	73%	95%
Net income	\$ 164	\$ 456	\$ 235	\$ 227	\$ 163
• Percent increase (decrease) from previous year	(64%)	94%	4%	39%	36%
Earnings per share	\$ 1.14	\$ 3.19	\$ 1.85	\$ 2.09	\$ 1.51
• Percent increase (decrease) from previous year	(64%)	72%	(13%)	38%	32%

TELOS CORPORATION

- Telos management attributes declines in net income to major investments in the development and marketing of microcomputer software products and in the development of increased business with the federal government.
 - Additional investments were made in the opening of consumer electronics service repair centers and regional expansion of consulting services.
 - Management anticipates fiscal 1984 revenue will reach \$38 million and that continued large investments in microcomputer software and regional expansion of consulting services will lower net income to approximately \$100,000.
- Telos is divided into four operating units as follows:
 - Telos Consulting Services division performs contract programming on a time and materials basis and accounted for 42% of the company's fiscal 1983 revenue.
 - Telos Federal Systems division provides professional services for the federal government and large defense contractors, and contributed 37% of fiscal 1983 revenue. This division combines the federal government business of the former Advanced Systems and Government Services divisions.
 - Systems Development Group contributed 20% of fiscal 1983 revenue and consists of two operating divisions:
 - Systems Software Division designs custom turnkey systems and systems and applications software and represents the commercial business of the former Advanced Systems Division.
 - Field Services Engineering Division provides third-party hardware maintenance services.
 - Telos Software Products, formerly the Product Development Division, is a wholly owned subsidiary that provides software packages for microcomputers and contributed 1% of fiscal 1983 revenue.
- As of March 31, 1983, Telos had 668 employees, segmented as follows:

Marketing/sales	41
Professional and technical	584
Computer operations	3
General and administrative	<u>40</u>
	668
- The company currently has 746 employees.

TELOS CORPORATION

- Major competitors by division/subsidiary include:
 - Telos Consulting Services: In the Los Angeles area, XXCAL and Abacus Programming Corporation. (Competition varies regionally.)
 - Telos Federal Systems: Computer Sciences Corporation, Informatics, and Calculon.
 - Telos Software Products: Microsoft, Management Science America, and Lotus Development Corporation.

KEY PRODUCTS AND SERVICES

- Telos' fiscal 1983 revenue was derived approximately as follows (\$ millions):

	<u>Revenue</u>	<u>Percent of Total</u>
Professional services	\$26.5	92%
• Custom software systems (\$13.9)		
• Contract programming (\$12.1)		
• Custom turnkey systems (\$0.5)		
Software products	0.3	1
Hardware maintenance	<u>2.0</u>	<u>7</u>
	\$28.8	100%

- Telos has provided systems and applications software development for aerospace, scientific, and business clients in almost all computer languages. Hardware experience includes most military and commercial mainframes as well as minicomputer and microprocessor systems.
 - Specific areas of expertise include command, control, and communications; aeronautics and avionics; real-time control and monitoring; data reduction; and defense-related programs.
 - Typical projects include:
 - Software development for Voyager and Galileo space probes for the Jet Propulsion Laboratory.
 - Design and implementation of spacecraft vehicle command software and telemetry systems for the RCA Commercial Satellite Program.
 - Development of software and training for Army Field Artillery Systems.

TELOS CORPORATION

- Development of data base management systems, language processors, and operating system enhancements for hardware vendors.
 - Development of the VFMED Training Simulator turnkey system for the U.S. Army.
- Recent contracts awarded to Telos for professional services include the following:
 - In September 1983 Telos was awarded a three-year contract valued at over \$23 million with the U.S. Army's Communications-Electronics Command of Fort Monmouth (NJ) for software support of the Field Artillery Tactical Data Systems (FATDS) at Fort Sill (OK).
 - Telos Federal Systems division has provided professional services to the Army's FATDS Software Support Group since 1976 and currently has over 240 employees at Fort Sill.
 - Under the new contract, Telos Federal Systems continues the development, modification, and maintenance of several Field Artillery Battlefield Automation Systems and provides advanced training programs to support these systems.
 - Under an additional \$9 million, three-year contract signed in September 1983 with the Army's Communications-Electronics Command, Telos will provide post deployment software support for computerized military communications systems.
 - Staffing for this new operation will total 40 engineers, programmers, and administrative personnel.
 - Telos Federal Systems will perform systems and software support for a variety of battlefield communications systems, providing voice and data communications using ground, airborne, and satellite networks.
 - Work recently began on a \$2.1 million contract with Hughes Helicopters, Inc. for the AH64A helicopter training simulator and on the Army's Battery Computer System training simulator.
- Telos Software Products develops microcomputer software products that are marketed either by Telos, publishers, or hardware manufacturers. Examples of current products include the following:
 - TeloFacts[™], introduced in 1983, is a decision support tool marketed exclusively by Dillithium Press of Beaverton (OR).
 - The product is currently available for the Apple II/IIe and IBM PC.

- TeloFacts 1 is priced at \$49.95. TeloFacts 2, with added reporting capabilities, is \$195.
- The software is distributed through bookstores, computer retailers, and direct mail.
- TeloSchoolTM, introduced in 1983, is a student record-keeping package for primary schools. Currently available for Apple II microcomputers, the software is priced at \$549 and is marketed by Telos.
- Telos has developed word processing and data communications software for Texas Instruments' new Compact Computer line. These products will be marketed by Texas Instruments.
- Telos recently signed a contract with Tandy Corporation to author the line of Radio Shack Student Administration Software Products.
- Additional products are being developed, including software for business graphics.
- Telos' Field Services Engineering Division provides third-party hardware maintenance on a wide variety of computers including IBM, DEC, and Data General. Virtually all brands of peripherals, minicomputers, and microprocessors are serviced. Most field services clients have equipment from a variety of vendors.
 - Services may be provided on-site or on-call. Installation planning, spares provisioning, and integrated logistics support are offered.
 - The division recently opened three electronics service repair centers to the public in a pilot test to determine the feasibility of that business.
 - In the fall of 1983 the division won eight contracts for equipment maintenance at four government sites. These contracts, totaling over \$400,000, are for preventive and remedial maintenance and cover Apple, CDC, DEC, IBM, STC, TELEX, and 3M equipment.

INDUSTRY MARKETS

- Telos' fiscal 1983 revenue was derived approximately as follows:

Department of Defense	31%
Commercial aerospace and defense	27
NASA	12
Computer industry	10
Other commercial	<u>20</u>
	100%

TELOS CORPORATION

- Commercial clients include Hughes Aircraft, Hughes Helicopters, Litton, Jet Propulsion Laboratory, RCA, GTE, ITT, Boeing, Martin Marietta, Stanford Telecommunications, System Development Corporation, Western Union, IBM, and Texas Instruments.

GEOGRAPHIC MARKETS

- One hundred percent of Telos' fiscal 1983 revenue was derived from the U.S. A further breakdown by region follows:

Western	65%
South Central	25
North Central	5
Eastern	<u>5</u>
	100%

- Telos has branch offices in Bountiful and Salt Lake City (UT); Boston; Denver; Houston; Lawton (OK); Seattle; and Fullerton, Glendale, San Diego, Santa Barbara, and Santa Clara (CA).
- Field offices are located at various client sites across the U.S.

COMPUTER HARDWARE AND SOFTWARE

- Telos has the following computers installed at its Santa Monica headquarters:
 - 1 Datapoint 6600, DOS, Datashare.
 - 1 DEC VAX-11/730, VMS.
 - 1 HP 1000E, RTE-6/VM.
 - 1 Perkin-Elmer 8/32, OS/32.
 - 1 TI 990/4, DX10.
 - 35 microcomputers, including the following models: Apple II, III; IBM PC; Radio Shack 2, 12; and Texas Instruments CC40.

COMPANY HIGHLIGHT

TELOS COMPUTING, INC.
3420 Ocean Park Boulevard
Santa Monica, CA 90405
(213) 450-2424

Lin Conger, President
Private Corporation
Total Employees: 570
Total Revenues, Fiscal Year
End 3/31/81: \$18,000,000
Computer Services Revenues:
\$16,560,000

PRINCIPAL BUSINESS

- Telos, founded in 1969, specializes in the design of military and aerospace real-time systems, writing application software, and implementing turnkey systems on a custom basis. Telos also offers third-party maintenance services.

FINANCIALS (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/81	3/80	3/79	3/78	3/77
Total Revenue	\$18,000	\$12,600	\$ 8,600	\$ 4,900	\$ 2,600
• Percent increase from previous year	43%	47%	76%	88%	67%
Income Before Taxes	\$ 429	\$ 404	\$ 234	\$ 120	73
• Percent increase (decrease) from previous year	6%	73%	95%	64%	225%
Net Income	\$ 235	\$ 227	\$ 163	\$ 120	\$ 51
• Percent increase (decrease) from previous year	3.4%	39%	36%	135%	206%
Earnings Per Common Share	\$ 1.85	\$ 2.09	\$ 1.51	\$ 1.14	\$ 0.50
• Percent increase (decrease) from previous year	(13%)	38%	32%	128%	208%

SOURCES OF REVENUE

Professional services		92%
. Custom turnkey systems	(50%)	
. Contract programming	(42%)	
Hardware maintenance		<u>8%</u>
		100%

DIVISIONS/SUBSIDIARIES

- Telos is divided into two operating units.
 - Telos Consulting Services performs contract programming on a time and materials basis, and accounted for 42% of the company's 1981 revenue.
 - Systems Development Group contributed 58% of 1981 revenues, and consists of four operating divisions:
 - Advanced Systems Group designs turnkey systems, custom designs systems and application software, and provides processing for space satellite operations.
 - Product Development Division designs custom software packages for third-party vendors.
 - Government Services Division provides professional services for the federal government, typically large contracts on a cost plus fixed fee basis.
 - Field Service Engineering provides third-party hardware maintenance.

EMPLOYEES

Marketing/sales	38
Professional and technical	503
Computer operations	4
General and administrative	<u>25</u>
	570

PRODUCTS AND SERVICES

- Telos has provided systems and application software development for aerospace, scientific, and business clients in almost all computer languages. Hardware experience includes most military and commercial mainframes as well as minicomputer and microprocessor systems.
 - Key areas of expertise include systems design for military and space satellite projects and data base management systems.
 - Typical projects include:

TELOS COMPUTING, INC.

- Software development for Voyager and Galileo space probes for the Jet Propulsion Laboratory.
 - Design and implementation of spacecraft vehicle command software and telemetry systems for the Air Force Defense Meteorological Satellite Program.
 - Develop software and training for Army Field Artillery Systems.
 - Develop data base management systems, language processors, and operating system enhancements for hardware vendors.
- Telos specializes in designing software packages to customer specifications. These packages are marketed by the customers, usually large OEMs, often as part of their turnkey systems. Telos does not sell software directly. Examples of packages designed for third party vendors include:
 - Student administration system.
 - Insurance casualty rating package.
 - Hospital admissions system.
 - Oil jobbers management system.
- Telos integrates hardware and software on a custom basis. Examples of these turnkey systems include:
 - A clothing inventory system based on an IBM 4331.
 - An integrated financial system based on Datapoint minicomputers.
 - A security portfolio management system based on Datapoint minicomputers.
- Telos Field Service Engineering provides third-party hardware maintenance on a wide variety of mainframes including IBM, DEC, and Data General. Virtually all brands of peripherals, minicomputers, and microprocessors are serviced.
 - Most field service clients have equipment from many vendors.
 - Services may be provided on-site or on-call.
 - Installation planning, spares provisioning and integrated logistics support are offered.

INDUSTRY MARKETS

Department of Defense	31%
Commercial Aerospace and Defense	27
NASA	12
Computer Industry	10
Other Commercial	20
	<hr/>
	100%

TELOS COMPUTING, INC.

- Major commercial clients include Hughes Aircraft, Litton, Jet Propulsion Laboratory, RCA, GTE, ITT, Stanford Telecommunications, Systems Development Corporation, and Western Union, as well as several of the largest hardware vendors.

GEOGRAPHIC MARKETS

Western Region	70%
South Central	20
North Central	5
Eastern Region	<u>5</u>
	100%

- Telos has branch offices in Bountiful (UT), Boston (MA), Denver (CO), Houston (TX), Lawton (OK), Seattle (WA), Fullerton (CA), Glendale (CA), San Diego (CA), Santa Barbara (CA), and Santa Clara (CA).

COMPUTER HARDWARE AND SOFTWARE

- In its Santa Monica headquarters, Telos has:
 - 2 Data General M600s, AOS.
 - 1 Perkin-Elmer Interdata 8/32, OS/32.
 - 2 Datapoint 660s, RMS.
 - 1 Texas Instruments 990/12, DX10.
 - 1 Texas Instruments 990/10, DX10.

Dropped

COMPANY HIGHLIGHT

TELSTAT SYSTEMS, INC.
150 East 58th Street
New York, NY 10022
(212) 826-0640

↓
Penny Kandiclides, President
Private Corporation,
closely held

Total Company and Computer Services Sales
as of FY ending 7/75: \$5,000,000 *E

NUMBER OF EMPLOYEES engaged in computer services: 40

KEY PRODUCTS/SERVICES: Telstat markets mostly software products,
as indicated by the distribution of sales below:

Software products	75%
Remote Computing	20%
Software Services	3%
Facilities (resource) management	2%
Total	100%

Software products consist of the following:

- TPMS, Telstat Performance Measurement System: for reviewing employee benefit and personal trust portfolios. The package provides current and comparative statistics regarding risk and return for employee benefits, and appreciation of a \$1 and principle and income time-weighted rates on personal trust.
- Telprice/70: for pricing of municipal bonds. Designed to help users evaluate portfolios but not to provide bids for trading purposes. Information provided includes:
 - dividends: annual rate, recent distributions, tax situation.
 - bond data: current yield, yield to maturity, and whether a call has been scheduled.
 - earnings: earnings or loss per share and number of shares.

The Masterlist includes debt and equity issues on the American and New York stock exchanges, U.S. Government Securities and Agency Bonds, CBOE, and over 7000 widely held unlisted Corporate and Municipal bonds, and preferred and common stock.

*E- sales estimated by INPUT.

June/1976

H-39.1

INPUT

COMPANY HIGHLIGHT/TELSTAT SYSTEMS, INC.

The main remote computing product is:

- Telac/70: a pricing data base which is updated and made available every evening. It provides the same type of information as Teleprice 70, only it is on-line and more up to date: shares outstanding, fiscal year, earnings per share, bid, high, low, close and volume figures.

APPLICATIONS: Stock and financial data bases constitute the majority of revenues, as shown in the distribution below:

Data Base	80%
General Business	7%
Customized Applications	13%
Total	100%

INDUSTRY MARKETS: Banking and finance dominate industries served, as shown by this revenue distribution:

Banking/Finance	88%
Manufacturing	6%
Insurance	5%
Government	1%
Total	100%

Some 225 banks and 45 brokerage house users include the following firms: First National Bank of Chicago, Wells Fargo, Chemical Bank, Merrill Lynch, Bache & Co., Bradford Shareholder Services, Western Union, Stein Roe & Farmham. Corporate clients include General Electric and American Express.

GEOGRAPHIC MARKETS: Revenues from some 400 customers are concentrated in the Northeast and Pacific States regions, as shown below:

Northeast	20%
Pacific States	20%
North Central	15%
South Central	15%
Southeast	10%
Midwest	10%
New England	5%
West	5%
Total	100%

A branch office is located in Hartford, Connecticut.

COMPUTER HARDWARE AND SOFTWARE: Telstat uses Xerox equipment:

1	Xerox	Sigma 9	CP-V
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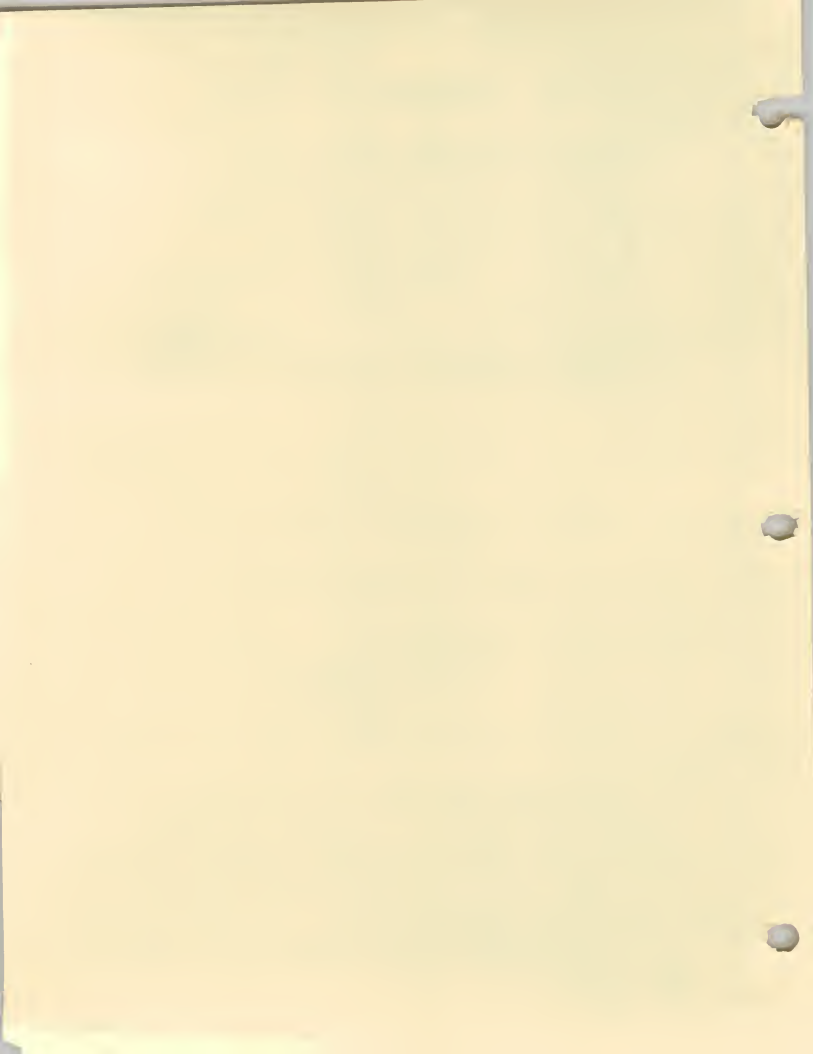
June/1976

COMPANY HIGHLIGHT/TELSTAT SYSTEMS, INC.

OVERALL ASSESSMENT AND TRENDS: Telstat was founded in 1970 by Penny Kaniclides, President; William J. Sern, Vice President; and Richard Greise, Vice President. Charles Brazelton, who joined the firm later is also a key member of the management team. The founders started out by using a Xerox 7 computer and upgraded to two Sigma 9's in 1973, which proved too ambitious, resulting in one being removed.

If the stock market continues to be strong, Telstat may realize its forecast of doubling its portfolio management sales by 1980.

Profits have increased dramatically, which was a key motivator of Telestat's acquisition by Western Union Teleprocessing. Scheduled to consummate in mid-July, Western Union paid in stock the equivalent of approximately \$14 million.



COMPANY PROFILE

TERA CORPORATION
2150 Shattuck Avenue
Berkeley, CA 94704
(415) 845-5200

R. Stephen Heinrichs, Chairman and
CEO
Donald Davis, President and COO
Public Corporation, OTC
Total Employees: 155
Total Revenue, Fiscal Year End
12/31/85: \$12,791,000*
Computer Services Revenue:
\$5,100,000**

THE COMPANY

- TERA Corporation, incorporated in 1974, provides professional services, software products, and customized turnkey systems primarily to clients in the electric power and utility, manufacturing, petrochemical, food processing, and defense industries.
 - TERA also provides engineering and consulting services to clients using proprietary software running on TERA computers. These systems have been developed primarily with customer funding, with TERA retaining the right to use these products and to market and license them to its general customer base.
 - TERA also produces security systems for nuclear power plants and other facilities requiring maximum security protection, and manufactures and markets page and card scanners and carousels used in records management and document control systems.
- Effective December 31, 1985, TERA changed its fiscal year end date from June 30 to December 31. The decision was based on TERA's desire to achieve a better match of its workload and its business cycles.
- Revenue for the six months ended December 31, 1985 reached \$12.8 million. Income from continuing operations was \$732,000.
- Revenue for the 12 months ended June 30, 1985 reached \$23.7 million, a 43% increase over revenue of \$16.6 million for the 12 months ended June 30, 1984. Net loss was \$5.3 million in 1985 compared to \$4.4 million for the same period in 1984. A five-year financial summary follows:

* Revenue stated is for six months ending December 31, 1985.

**INPUT estimate

TERA CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	Six Months Ended 12/31/85	6/85	6/84 (a)	6/83 (a)	6/82
Revenue from continuing operations	\$ 12,791	\$ 23,692	\$ 16,590	\$ 18,100	\$ 31,678
• Percent increase (decrease) from previous year	N/A	43%	(8%)	(43%)	34%
Income (loss) before taxes	\$ 1,566	\$ (7,846)	\$ (8,929)	\$ 2,370	\$ 9,968
• Percent increase (decrease) from previous year	N/A	(12%)	(477%)	(76%)	29%
Net income (loss)	\$ (1,708)	\$ (5,330) (b)	\$ (4,438)	\$ 2,763	\$ 5,619
• Percent increase (decrease) from previous year	N/A	(20%)	(261%)	(51%)	40%
Earnings per share	\$ 0.10	\$ (0.68)	\$ (0.48)	\$ 0.30	\$ 0.71
• Percent increase (decrease) from previous year	N/A	(42%)	(260%)	(58%)	39%

(a) Restated to exclude discontinued operations.

(b) Includes a \$2,696,000 pre-tax loss from restructuring of operations (approximately \$1,348,000 net after-tax loss).

- TERA recorded an extraordinary loss of \$2.4 million net of tax from the settlement of the class action securities litigation associated with TERA's initial public offering of stock.
- In order to eliminate unprofitable operations, TERA management has done the following:
 - TERA has discontinued marketing turnkey wind energy systems. TERA will continue to provide project management services to clients with wind energy systems already installed.
 - Revenue related to wind energy systems totaled \$4.4 million, \$862,000, and \$6.2 million for fiscal 1985, 1984, and 1983,

TERA CORPORATION

respectively. This business negatively impacted TERA's overall results with net losses of \$938,000 and \$247,000 for fiscal 1985 and 1984, respectively.

- In July 1985, TERA restructured operations by selling its large systems imaging business, Automated Records and Management System (ARMSTM) to Integrated Automation, Inc. (Alameda, CA). TERA sold ARMS, with a net book value of \$2,696,000, to Integrated Automation for future considerations.
- TERA has refocused its software organization to market to utility customers and major manufacturing companies.
- TERA's plans for the future include:
 - Continuing to provide computer-aided services and software products to the utility and manufacturing industries.
 - Investing internally in new business areas.
 - Repurchasing of TERA stock.
 - Acquiring companies with value-added, computer-related products and services.
- Revenue for the six months ending June 30, 1986 reached \$15.8 million, a 42% increase over revenue of \$11.1 million for the same period in 1985. Net income for the period was \$1.2 million compared to a net loss of \$5.4 million for the same period a year ago.

KEY PRODUCTS AND SERVICES

- INPUT estimates that TERA derived approximately 40% of revenue for the six months ended December 31, 1985 from computer services. Approximately 57% of computer services revenue was derived from custom software and custom turnkey systems. The remaining 43% was derived from application software products.
- Approximately 60% of TERA's revenue was noncomputer services related. Noncomputer services revenue was derived from engineering and consulting services and from the sale of security systems and page and card scanners and carousels.
- Currently, TERA offers seven software packages that run on IBM 43XX and 30XX mainframes under MVS or DOS operating systems, DEC VAX-11/700 series computers under VAX/VMS operating system, or on Data General MV 4000 D/C computer systems. Each software package ranges in price from \$60,000 to \$175,000. A description of the software follows:

TERA CORPORATION

- Document Control System (DCS) indexes and cross-references records and drawings for on-line search and retrieval while monitoring and controlling the reproduction and removal of original documents.
- MCP^{T.M.} (Maintenance Control Program) supports all phases of maintenance planning, inventory control, and procurement tracking. MCP identifies equipment and report history, provides bills of materials and detailed parts lists, and creates maintenance work order processing for corrective, preventive, and emergency repairs. Manpower planning and scheduling as well as requisition and purchase order processing are provided. MCP is available on IBM mainframe, DEC VAX, and Data General computer systems.
- COM/TROL^{T.M.} (Regulatory Commitments Control) maintains on active file of planned activities, commitment due dates, and other data pertaining to regulatory issues. COM/TROL is available on IBM and Data General computer systems.
- Radiological Information Management System (RIMS) is a system for reporting, tracking, and evaluating data in order to control exposure of personnel to radiation and to toxic and hazardous materials. RIMS is available on Data General systems and IBM mainframes.
- Plant Information Management System (PIMS^{T.M.}) is an on-line information system that coordinates and controls plant maintenance for the utility industry. The system is built around TERA's Maintenance Control Program and includes capabilities from COM/TROL and RIMS. PIMS is available on IBM mainframes.
- Fleet Maintenance Management System (FMMS) is used to plan periodic, corrective, and emergency road call maintenance operations for corporate or municipal vehicle fleets. The system provides scheduling of preventive maintenance, issues repair orders, supplies historical maintenance data, provides for spare parts purchasing and inventory control, issues accounting and management information reports, and provides an interface to automated fuel dispensing systems. FMMS is available on Data General computer systems.
- Container Tracking System (JOBTRACK) controls the movement and repair cycle status of containers and provides invoicing and client reporting services. JOBTRACK is available on Data General computer systems.

INDUSTRY MARKETS

- TERA derived its revenue as follows:

Utilities	83
Manufacturing	7
Government	2
Other	<u>8</u>
	100%

TERA CORPORATION

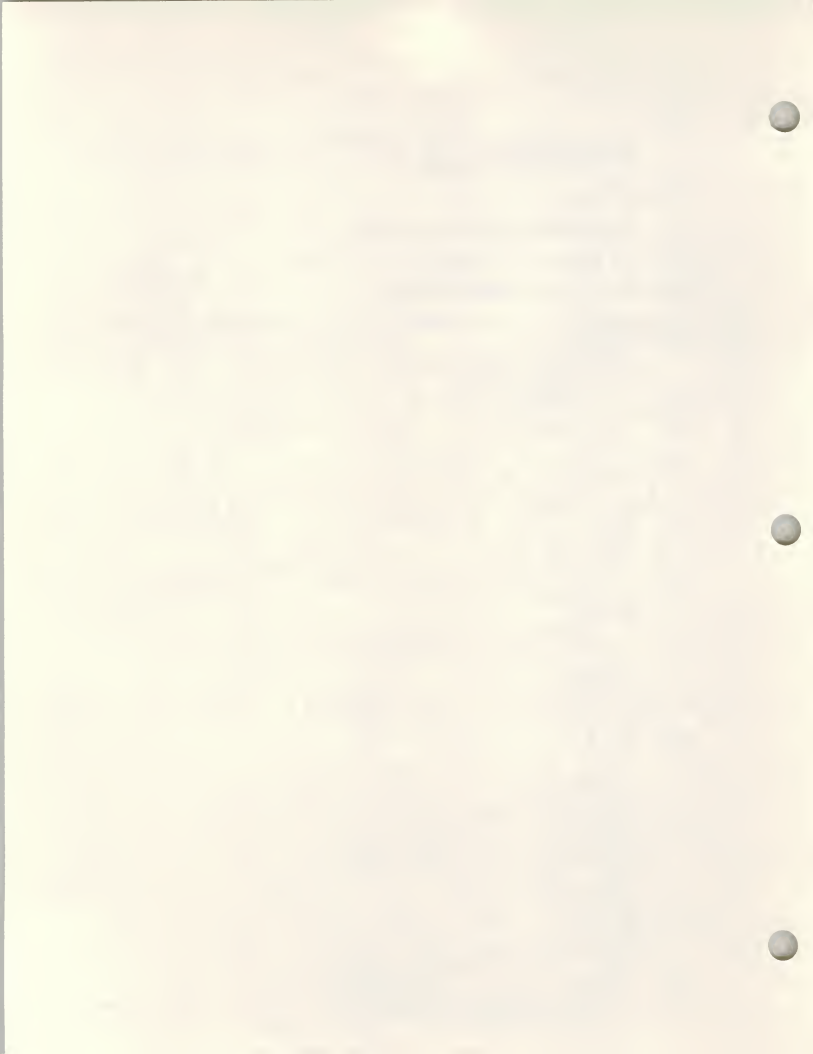
- TERA derived approximately 44% of revenue for the six months ended December 31, 1985 from Texas Utility Generating Company, and 17% from Pacific Gas and Electric Company.

GEOGRAPHIC MARKETS

- TERA derived all its revenue from the U.S.
- TERA maintains a branch office in Bethesda (MD).

COMPUTER HARDWARE AND SOFTWARE

- TERA has the following computers for internal use installed at its headquarters:
 - Prime 750, PRIMOS.
 - Prime 550, PRIMOS.
 - Prime 400, PRIMOS.



FINANCIAL UPDATE TO PROFILE DATED JANUARY 1984

TERA CORPORATION
2150 Shattuck Avenue
Berkeley, CA 94704
(415) 845-5200

R. Stephen Heinrichs, Chairman,
President, and CEO
Public Corporation, OTC
Total Employees: 175
Total Revenue, Fiscal Year End
6/30/85: \$23,692,000
Computer Services Revenue:
\$11,500,000*

TERA CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	6/85	6/84 (a)	6/83 (a)	6/82	6/81
Revenue from continuing operations	\$ 23,692	\$ 16,590	\$ 18,100	\$ 31,678	\$ 23,690
• Percent increase (decrease) from previous year	43%	(8%)	(43%)	34%	31%
Income (loss) before taxes	\$ (7,846)	\$ (8,929)	\$ 2,370	\$ 9,968	\$ 7,723
• Percent increase (decrease) from previous year	(12%)	(477%)	(76%)	29%	31%
Net income (loss)	\$ (5,330) (b)	\$ (4,438)	\$ 2,763	\$ 5,619	\$ 4,008
• Percent increase (decrease) from previous year	(20%)	(261%)	(51%)	40%	34%
Earnings per share	\$ (0.68)	\$ (0.48)	\$ 0.30	\$ 0.71	\$ 0.51
• Percent increase (decrease) from previous year	(42%)	(260%)	(58%)	39%	34%

(a) Restated to exclude discontinued operations.

(b) Includes a \$2,696,000 pre-tax loss from restructuring of operations (approximately \$1,348,000 net after-tax loss).

*INPUT estimate

TERA CORPORATION

- TERA management attributes declines in revenue and income to:
 - A failure of customers to pay for wind energy systems purchased.
 - The higher than anticipated production costs of large systems.
 - The slower than anticipated sales of software and turnkey systems.
- In order to eliminate unprofitable operations, TERA management has done the following:
 - TERA has discontinued manufacturing and marketing its wind energy systems. TERA will continue to provide project management services to clients with wind energy systems already installed.
 - Revenue related to wind energy systems totaled \$4.4 million, \$862,000, and \$6.2 million for fiscal 1985, 1984, and 1983, respectively. This business negatively impacted TERA's overall results with net losses of \$938,000 and \$247,000 for fiscal 1985 and 1984, respectively.
 - In July 1985, TERA restructured operations by selling its Automated Records and Management System (ARMSTM) to Integrated Automation, Inc. (Alameda, CA). TERA sold ARMS, with a net bank value of \$2,696,000, to Integrated Automation for future considerations.
- TERA's plans for the future include:
 - Continuing to provide computer-aided services and software products to the utility and manufacturing industries.
 - Investing internally in new business areas.
 - Repurchasing of TERA stock.
 - Acquiring companies with value-added, computer-related products and services.
- Effective December 31, 1985, TERA will change its fiscal year end date from June 30 to December 31. The decision is based on TERA's desire to achieve a better match of its workload and its business cycles.

SOURCE OF REVENUE

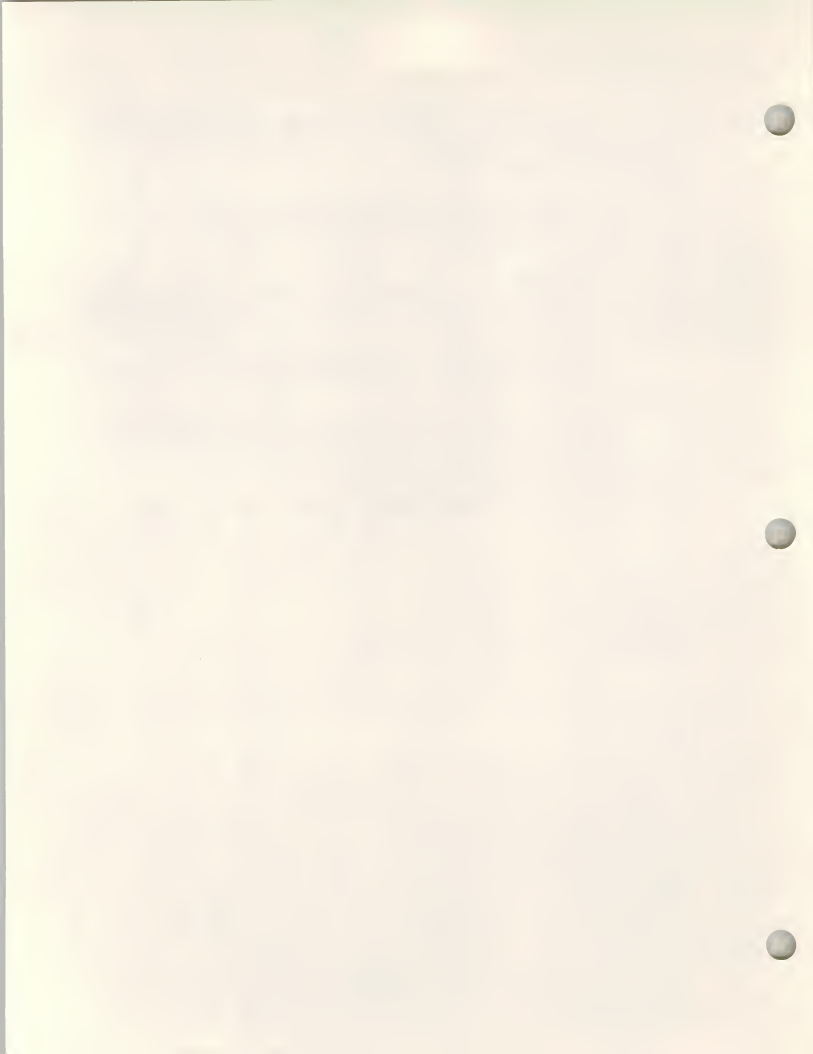
- INPUT estimates that approximately 49% of TERA's fiscal 1985 revenue was computer services related. Computer services provided include professional services (the development and implementation of custom software and turnkey systems) and application software packages.

TERA CORPORATION

- INPUT estimates that noncomputer engineering and consulting services accounted for approximately 51% of fiscal 1985 revenue.

NEW PRODUCTS AND SERVICES

- Plant Information Management System (PIMS^{T.M.}) is an on-line information system that coordinates and controls plant maintenance for the utility industry. The system is built around TERA's Maintenance Control Program (MCP^{T.M.}) and consists of eight major subsystems.
 - The major subsystems include Management Action Subsystem, Commitment Tracking Subsystem, Resource Data Subsystem, Maintenance Planning Subsystem, Purchasing Subsystem, Inventory Control Subsystem, Radiation Protection Subsystem, and Personnel Subsystem.
 - PIMS operates on IBM 43XX and 30XX mainframes with MVS or DOS operating systems, and the CICS communications system. The software is priced at \$175,000.
- In fiscal 1985 TERA introduced versions of its software to run on IBM mainframes and on the Data General MV 4000 D/C. Specific applications available for these computers include fleet maintenance, container repair tracking, records control, purchasing, inventory, and security.
 - Each software package ranges in price from \$60,000 to \$175,000.



COMPANY HIGHLIGHT

TERA CORPORATION
2150 Shattuck Avenue
Berkeley, CA 94704
(415) 845-5200

Michael John Keaton, Chairman and
CEO
Robert W. Felton, President
Public Corporation, OTC
Total Employees: 190
Total Revenue, Fiscal Year End
6/30/83: \$24,275,000
Computer Services Revenue:
\$9,500,000*

THE COMPANY

- TERA Corporation, incorporated in 1974, provides professional services, software products, and customized turnkey systems primarily to clients in the electric power and utility, manufacturing, petrochemical, food processing, and defense industries.
 - The company also provides engineering and consulting services to its clients, using its proprietary software running on its own computers. These systems have been developed primarily with customer funding, with TERA retaining the right to use these products and to market and license them to its general customer base.
 - TERA also provides wind turbine and cogeneration power plants to electric utilities and private customers.
- Fiscal 1983 revenue was \$24.3 million, a decrease of 23% from fiscal 1982 revenue of \$31.7 million. Net income declined 51% from \$5.6 million in 1982 to \$2.8 million in 1983. A five-year financial summary follows:

*Company estimate

TERA CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	6/83	6/82	6/81	6/80	6/79
Revenue	\$ 24,275	\$ 31,678	\$ 23,690	\$ 18,075	\$ 11,568
• Percent increase (decrease) from previous year	(23%)	34%	31%	56%	66%
Income before taxes	\$ 3,861	\$ 9,968	\$ 7,723	\$ 5,885	\$ 3,728
• Percent increase (decrease) from previous year	(61%)	29%	31%	58%	56%
Net income	\$ 2,763	\$ 5,619	\$ 4,008	\$ 2,988	\$ 1,876
• Percent increase (decrease) from previous year	(51%)	40%	34%	59%	64%
Earnings per share	\$ 0.30	\$ 0.71	\$ 0.51	\$ 0.38	\$ 0.24
• Percent increase (decrease) from previous year	(58%)	39%	34%	58%	50%

- TERA management attributes declines in revenue and income to the following factors:
 - A reduced order rate for large, custom-designed systems from corporate customers who deferred capital purchases during the recession.
 - The inability to generate revenue from software products and turnkey systems during fiscal 1983.
 - The phasing out of a major multiyear contract with the U.S. Nuclear Regulatory Commission (NRC), which contributed 1%, 17%, and 35% to fiscal 1983, 1982, and 1981 revenue, respectively.
- In July 1982 TERA made an initial public offering of 2.5 million shares of common stock, with 1.25 million shares sold by the company and 1.25 million by selling shareholders.
- Net proceeds to the company of approximately \$18.3 million are being used for software product and turnkey system development, to expand hardware production facilities, and for general corporate purposes.

TERA CORPORATION

- Revenue for the three months ending September 30, 1983, was \$4.4 million, a decline of 49% from \$8.6 million for the same period last year. The company reported a net loss of \$750,000 for the period compared with net income of \$1.7 million in 1982.
 - The previously mentioned factors affecting fiscal 1983 revenue and income continued to depress financial results for the first quarter of fiscal 1984. TERA management anticipates that the company will show a profit during fiscal 1984 based on increased sales and reduced overhead.
- Major competitors for TERA's computer-services-related professional services and packaged software products include McDonnell Douglas Automation Company, Martin Marietta, Energy, Inc., and Bonner & Moore.

KEY PRODUCTS AND SERVICES

- Approximately 39% (\$9.5 million) of TERA's fiscal 1983 revenue was computer services related, derived from professional services contracts for the development and implementation of custom software and turnkey systems.
 - The remainder of revenue was derived from noncomputer services as follows:
 - Approximately \$9.3 million was derived from engineering and consulting services.
 - About \$5.5 million was derived from engineering support and wind-turbine systems developed for the Delta III Wind Energy Project located in Northern California.
- The company's policy has been to undertake software and turnkey development projects primarily if they lead to proprietary products that can later be marketed by TERA. Software and turnkey system product sales have not yet significantly contributed to revenue. During 1983 TERA management initiated a structured marketing plan for these types of products and anticipates volume sales during fiscal 1984 and 1985.
- A list of available software products developed by TERA and categorized as they relate to typical project phases is presented in the exhibit. Pricing is available on request.
- TERA's software is designed to run on IBM, DEC, and Data General computers. The following products have been developed through professional services contracts for specific customers, with TERA retaining product marketing rights:
 - The Records and Data Management System (RDMS^{T.M.}) is a data base manager that provides on-line access and control of records and data created and used in the design, construction, operation, and maintenance.

EXHIBIT

TERA CORPORATION
SOFTWARE PRODUCTS

APPLICATION AREA/ PRODUCT AND ASSOCIATED MODULES
<ul style="list-style-type: none"> ● Planning <ul style="list-style-type: none"> — Energy Forecast Model — Site Selection Models — Risk Assessment Models — Utility Planning Model — Utility Simulation Models ● Energy Exploration/Development <ul style="list-style-type: none"> — Three-Dimensional Reservoir Analyzer — Horizontal Anisotropic Reservoir Analyzer — Fuel Transportation Cost Model — Geophysical Linear Inverse Package ● Licensing <ul style="list-style-type: none"> — Environmental Data Management System — Licensing Risk Assessment Model — Microseismic Systems ● Design <ul style="list-style-type: none"> — Records and Data Management System (RDMS) — Design Data Base System — Design Control System — Automated Drawing Control System — Fault Tree Analysis Model ● Procurement <ul style="list-style-type: none"> — Purchase Order Tracking System — Procurement Scheduling — Contract Monitoring System — Component/Action Item Tracking

APPLICATION AREA/ PRODUCT AND ASSOCIATED MODULES
<ul style="list-style-type: none"> ● Management and Administration <ul style="list-style-type: none"> — Data Management System — Document Control System — Project and Engineering Management <ul style="list-style-type: none"> • Cost Control System • Scheduling System — Regulatory Commitments Control System (COM/TROL) — Nuclear Law Reference (NUCLEX) ● Construction <ul style="list-style-type: none"> — Construction Security Systems — Construction Quantity Tracking — Startup Punchlist Control — Material Receipt and Warehousing ● Operation and Maintenance <ul style="list-style-type: none"> — Equipment Data Management System — Maintenance and Operating System — Security Systems — Occupational Health and Safety System (RIMS) — Maintenance Control Program (MCP) — Automated Record Management System (ARMS)

nance of energy and industrial facilities. RDMS was first developed in 1976 and includes report writer capabilities. License fees for an RDMS system range from \$150,000 to \$270,000.

- Examples of individual software modules that are typically integrated with RDMS and license for \$30,000 to \$75,000 include the following:
 - Document Control indexes and cross-references records and drawings for on-line search and retrieval while monitoring and controlling the reproduction and removal of original documents.
 - MCP^{T.M.} (Maintenance Control Program) supports all phases of maintenance planning, inventory control, and procurement tracking. MCP identifies equipment and report history, provides bills of materials and detailed parts lists, and creates maintenance work order processing for corrective, preventative, and emergency repairs. Manpower planning and scheduling as well as requisition and purchase order processing are provided.
 - COM/TROL^{T.M.} (Regulatory Commitments Control) maintains an active file of planned activities, commitment due dates, and other data pertaining to regulatory issues.
 - NUCLEX^{T.M.} (Nuclear Law Reference) provides on-line access to a data base of nuclear regulatory administrative law, including updates of new regulations. Features include options for searching, sorting, and interrogating the data base.
 - Project and Engineering Management supports scheduling, budgeting, estimating, cash flow analysis, trend analysis, and resource management.
 - Occupational Health and Safety (RIMS) is a system for reporting, tracking, and evaluating data in order to control exposure of personnel to radiation and to toxic and hazardous materials.
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- Versions of ARMS systems range in price from \$100,000 to \$5 million depending on the number of terminals supported.
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- Almost one-half of TERA's fiscal 1983 computer services revenue was derived from the electric power and utility industry. Less than 1% was derived from government contracts. The remaining revenue was derived from discrete and process manufacturers.
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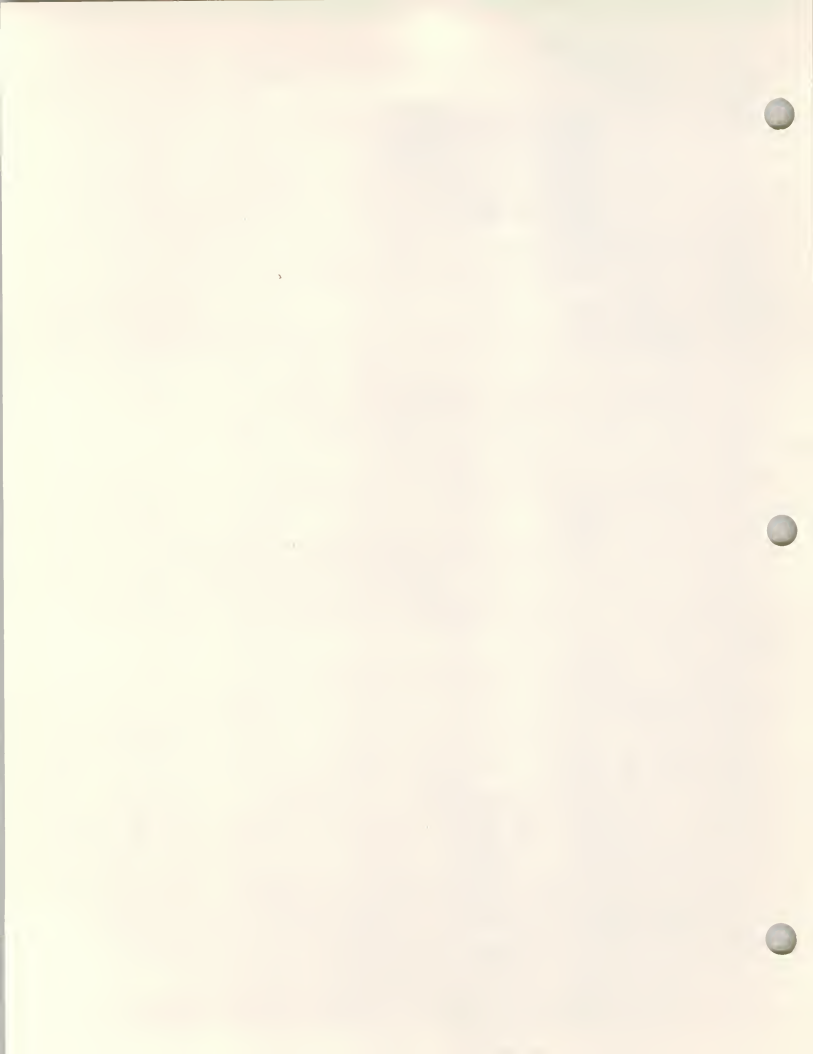
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TERA CORPORATION

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- Data General C/350, ADOS.
- Data General MV/4000, AOS/PS.
- Data General S/140.
- DEC VAX-11/780, VMS.
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TERA CORPORATION

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- DEC PDP-11/44, UNIX.
- DEC PDP-11/34, RSX.
- IBM PC/XT.
- Vector Graphic.
- Osborne.



Vendor Profile

A Publication from INPUT's Vendor Analysis Program - U.S.

May 1994

Terrano Corporation

President & CEO: James A. Terrano
 245 South 84th Street
 Lincoln, NE 68510
Phone: (402) 483-7831
Fax: (402) 483-7846

Status:	Public
Employees:	86 (3/94)
Revenue:	\$ 10,213,224
Fiscal Year End:	12/31/93

Key Points

- Terrano Corporation markets and supports the IBM AS/400-based ILS-5 Laboratory Information System to the health care industry.
- The company's financial performance was up sharply in 1993. Revenues reached a new all-time high of \$10.2 million and earnings improved by nearly \$2.5 million.
- With the discontinuation of Prime Computer's operations in 1992, Terrano

reported a \$2 million noncash charge to its 1992 results. Prime had been one of Terrano's principal computer hardware suppliers.

- Terrano began converting its Prime client base to the AS/400 platform in 1993 and plans to continue this conversion for the next two or three years.
- Joint marketing agreements with GTE Health Systems and IBAX Healthcare Systems contributed significantly to Terrano's revenues in 1993. Fourteen ILS-5 systems were sold under these agreements in 1993.
- In March 1994, Terrano announced a joint marketing agreement with First

Coast Systems, that sells its APaCS Hospital Information System on the AS/400 platform.

Company Description

Terrano Corporation, founded in 1977, develops, markets and supports integrated IBM AS/400-based turnkey systems for clinical laboratory applications to the health care industry. Terrano is a value-added reseller for IBM.

The company's flagship product, the ILS-5 Clinical Laboratory Information System, was originally developed for Prime 50-Series computers. In 1990, a version of the ILS-5 was released for the AS/400.

- Although Prime Computer has discontinued its operations (including the production and sales of its 50-Series hardware), Terrano continues to provide software support services to all its Prime-based ILS-5 clients while it carries out its plan to convert these systems to the AS/400 platform. Hardware maintenance services for Prime-based ILS-5 systems are provided by Computervision.
- Terrano has 125 ILS-5 client sites, including 71 Prime 50-Series-based systems and 54 AS/400-based systems.

Strategy

Terrano has developed a transition plan for its Prime client base that makes the transfer to the AS/400 platform a much more cost-effective alternative for the client than purchasing a new laboratory information system from another vendor.

- Terrano management considers the preservation of its existing client base (from which the company derived more than 40% of its 1993 revenues) to be a very high priority.
- Terrano anticipates that most of its Prime clients will be converted to the IBM AS/400 platform within the next three years.

Terrano's single-version philosophy protects clients' investments in technology. The ILS-5 is a single version product. Each client is provided a new version of the software annually, and every client always has the most up-to-date software version available.

Price declines for AS/400 systems have allowed Terrano to offer a more comprehensive laboratory information system to smaller hospitals that most of the PC-based vendors at comparable prices. While Terrano currently sells its systems to a range of clients, its growth strategy includes increasing sales and marketing efforts to smaller hospitals (less than 250 beds). In addition, the company will continue to seek license relationships with multifacility health care providers.

In order to further expand its marketing opportunities, Terrano is forming alliances with other vendors in the health care industry that offer products that are complimentary to the ILS-5.

- Examples of these types of products include information systems for other ancillary departments within the hospital such as pharmacy, medical records or nursing and large hospital

information systems that do not feature a laboratory system product.

- Terrano has successfully completed and installed interfaces to most major information systems and also offers interfaces to instruments and reference laboratories.

Financials

Terrano's 1993 revenue increased nearly 17% to \$10.2 million. Net income reached \$691,000, compared to net losses of nearly \$1.8 million for 1992, which included a \$2

million provision for losses from the discontinuance of its Prime hardware platform.

- The majority of the \$2 million loss is for write-offs of the unamortized portion of capitalized software development for the Prime product line. It also includes write-offs of most of Terrano's internal Prime hardware and estimated future costs associated with the discontinuance of this product line.
- A five-year financial summary follows:

Terrano Corporation
Five-Year Financial Summary
 (\$ Thousands, except per share data)

Item	Fiscal Year				
	1993	1992	1991	1990	1989
Revenue	\$12,213	\$8,754	\$8,687	\$6,606	\$4,945
• Percent change from previous year	17%	1%	32%	34%	35%
Income (loss) before taxes	\$691	\$(1,776)	\$1,077	\$820	\$378
• Percent change from previous year	139%	(265%)	31%	117%	17%
Net income (loss)	\$691	\$(1,776)	\$1,070	\$814	\$378
• Percent change from previous year	139%	(266%)	31%	115%	17%
Earnings (loss) per share	\$0.13	\$(0.33)	\$0.22	\$0.17	\$0.08
• Percent change from previous year	139%	(250%)	29%	113%	--

(a) Includes a \$2 million loss from the discontinued Prime product line.

Interim Results: Revenue for the three months ending March 31, 1994 were \$2.3 million, compared to nearly \$2.4 million for the same period in 1993. Net income was \$37,000, compared to \$147,000 for the same period a year ago. The company's first quarter is historically one of slowest periods.

Approximately 79% of Terrano's 1993 revenue was derived from turnkey system sales and 21% from software support and maintenance services.

- Equipment sales occur in most new system sales and when existing clients upgrade and/or add to their ILS-5

hardware configuration. While the majority of Terrano's clients purchase their hardware from Terrano, some purchase hardware from other distributors or directly from the manufacturer.

- Software license revenues occur with new system sales and when existing clients add application enhancement modules to their existing ILS-5 systems.
- A three-year summary of source of revenue follows:

Terrano Corporation
Three-Year Source of Revenue Summary
 (\$ Millions)

	Fiscal Year					
	1993		1992		1991	
Product/Service	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Equipment sales	\$4.0	39%	\$3.7	42%	\$4.5	51%
Applications software licenses	4.1	40%	3.4	39%	2.8	33%
Software support and maintenance	2.1	21%	1.6	19%	1.4	16%
Total	\$10.2	100%	\$8.7	100%	\$8.7	100%

Revenue growth in 1993 was due to increased revenue from Terrano's existing client base for add-on hardware and software, plus revenue increases for software support and maintenance.

- Computer system equipment sales and support revenue increased 7% in 1993 to \$4 million. Nearly all hardware sales in 1993 were IBM and other peripheral hardware. Hardware sales have become a less significant component of total revenues because clients have the option to purchase their IBM hardware from Terrano, other IBM dealers or directly from IBM.
- Applications software license revenues increased 20% in 1993. Nearly all sales were for the AS/400 platform, though Terrano continues to sell some add-on software modules to its existing Prime client base.
- Software support and maintenance revenue increased 32% in 1993. Prime platform software support revenue increased by nearly 8% to \$1.5 million and AS/400 software support revenue increased 202% to \$608,000. As clients convert to AS/400 systems, support revenues from the Prime client base will level off and begin to decline.

Market Financials

One hundred percent of Terrano's 1993 revenue was derived from the medical industry.

Terrano's turnkey systems are installed in small rural community hospitals and large urban medical centers, as well as private reference laboratories, hospital-based reference laboratories, networked multihospital sites and group practice clinics.

One customer, Humana, contributed revenue of \$1 million (10% of total revenue) in 1993, \$2.2 million (26% of total revenue) in 1992 and \$3.4 million (39% of total revenue) in 1991. Humana has been a Terrano client since 1983.

- Terrano had a paid-up software license agreement with Humana that provided approximately \$650,000 of annual software license revenues during 1990, 1991 and 1992. The final payment was made in 1992.
- During 1993, Humana split its operations and transferred its contract interest with Terrano to Galen Healthcare, Inc., which subsequently merged with Columbia Healthcare Corporation.
- As a result of the merger, Terrano's ILS-5 system is presently installed at twenty-six Columbia hospitals on the Prime platform and six Columbia hospitals on the IBM AS/400 platform.

- Columbia intends to continue to purchase IBM AS/400 hardware and support services from Terrano for existing and new ILS-5 installations.

Geographic Markets

One hundred percent of Terrano's 1993 revenue was derived from the U.S.

Terrano currently has 125 client sites in 37 states.

Key Products and Services

The ILS-5 Laboratory System for clinical laboratories was first introduced in 1982. The system was designed to enhance a laboratory's capabilities throughout the entire process of ordering and testing as well as producing patient and management reports.

- The system provides the basis for all information handling needs of hospitals, reference laboratories and clinics to increase staff productivity and improve cost-effectiveness. It monitors and controls the flow of specimens through the laboratory, accesses necessary information when needed, interfaces to automated laboratory instruments and other information systems—ensuring integrity of information throughout the institution—and complies with all internal and external regulations.
- The primary applications supported include:
 - Admission
 - Discharge

- Transfer
 - Patient demographics
 - Order entry
 - Bar coding and specimen
 - Collections
 - Section management
 - Results entry
 - Quality control
 - Laboratory productivity
 - Risk management/quality assurance
 - Results inquiry and reporting
 - Service billing
- Optional modules include:
 - Advanced microbiology
 - Laboratory management
 - Transfusion service manager
 - ANSIRS (Anatomical Surgical Information Retrieval System)
 - Remote user network
 - Client services
 - Distributed laboratory systems interface
 - Reference laboratory interface
 - Training/validation/testing system
 - Query and report writer
 - Hand-held collection devices.
 - Although Terrano offers standard and optional features, operational characteristics of ILS-5 can be tailored to the specific needs of the client.
 - The ILS-5 Laboratory System is installed at 125 client sites.

Terrano no longer actively markets but continues to support its ARIS (Advanced Radiology Information

System) for Prime 50 Series computers.

The installation of a new client site can take anywhere from three to nine months or longer, depending on the system configuration (hardware and software), the size and complexity of the client laboratory operation and the timing requirements of the laboratory client.

Software maintenance and support is available seven days a week, 24 hours a day from Terrano's Software Services Support Center. Hardware maintenance is provided directly by Computervision and IBM.

Clients

Terrano has 125 installations of its system.

Clients announced in 1994 include Roche Biomedical Laboratories (Burlington, NC), Cameron Memorial Community Hospital (Angola, IN), Katherine Shaw Bethea Hospital (Dixon, IL) and Morgan County Memorial Hospital (Martinsville, IN).

Marketing and Sales

Terrano sells its ILS-5 system through direct sales and various alliances as described below.

Alliances

Terrano has various alliances/agreements with the following vendors that also market AS/400-based systems:

- Since 1992, Terrano has had an agreement with GTE Health

Systems (GTEHS) to market Terrano's ILS-5 system to current and prospective GTEHS clients. GTEHS markets and supports the MedSeries4 Hospital Information System. Terrano sold six ILS-5 systems under this agreement during 1993.

- During 1993, Terrano entered into an agreement with IBAX Healthcare to market Terrano's ILS-5 system to current and prospective IBAX Series 3000 and 4000 system clients. Terrano sold eight ILS-5 systems under this agreement during 1993.
- In March 1994, Terrano formed an agreement with First Coast Systems, Inc. to market the ILS-5 to First Coast's current and prospective APACS Hospital Information System clients.

Competitors

Competitors include large hospital information system vendors selling laboratory information modules to existing clients or as an adjunct to the HIS sale, laboratory information system vendors offering fully-featured systems and laboratory information system vendors selling networked microcomputer systems.

- Large hospital information system vendors: HBO & Company, Shared Medical Systems and Medical Information Technology (MEDITECH)
- Laboratory information systems for DEC/HP/IBM: Cerner Corporation,

Sunquest Information Systems, Dynacor, 3M Health Information Systems, Advanced Laboratory Systems, Antrim Corporation and Soft Computer Consultants

- Laboratory information systems with dedicated file servers: Citation, Laboratory Consulting, Community Health Computing and 3Net Systems

INPUT Assessment

Terrano's strengths include the following:

- A single version software philosophy that assures clients of the latest technology—regardless of when purchased
- Targeting a high-growth area of the hospital market (80 to 300 beds)
- Strong partnerships with several leading vendors in the health care industry

Terrano's challenges include:

- Possible need to migrate from a single-platform (AS/400) product line to an open system platform to stay competitive
- Competing against several larger, better-financed vendors

COMPANY PROFILE

TERRANO CORPORATION

245 South 84th Street
Lincoln, NE 68510
(402) 483-7831

James A. Terrano, President and CEO
Public Corporation, NASDAQ
Total Employees: 82 (3/92)
Total Revenue, Fiscal Year End
12/31/91: \$8,687,255

The Company

Terrano Corporation, founded in 1977, develops, markets, and supports integrated Prime and IBM AS/400-based turnkey systems for clinical laboratory and radiology applications to the health care industry. Terrano is a value-added reseller for Prime and IBM.

- From 1981 to 1985, Terrano was involved in the development of a complete hospital information system product line that included systems for the ancillary departments of laboratory and radiology. During 1985, the company shifted its marketing, development, and product enhancement efforts to emphasize its ILS-5 Laboratory System and its ARIS Radiology System product families--both of which were fully operational. At the same time, Terrano discontinued its efforts to develop a complete hospital information system.
- From September 1985 to August 1986, Terrano operated as a debtor-in-possession under Chapter 11. In 1986, the company successfully completed its reorganization plan and has since regained its financial viability and profitability.
- In November 1988, Terrano completed a private placement of 800,000 shares of its common stock. Net proceeds of approximately \$900,000 were used to repay \$500,000 of long-term debt and to provide additional working capital.
- During 1990, the company's IBM AS/400-based ILS-5 beta site was brought to live operation and installation of three other AS/400-based sites was begun. The core AS/400 ILS-5 development work was completed during 1989.
- In December 1991, Terrano completed a second public offering of 1.5 million shares of common stock, of which 1.1 million were sold by two selling shareholders. Net proceeds to the company were approximately \$1.3 million.

Terrano's 1991 revenue reached \$8.7 million, a 32% increase over 1990 revenue of \$6.6 million. Net income rose 31%, from \$814,000 in 1990 to nearly \$1.1 million in 1991. A five-year financial summary follows:

**TERRANO CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR					
	1991	1990	1989	1988	1987	CAGR
Revenue	\$8,687	\$6,606	\$4,945	\$3,665	\$2,958	31%
• Percent increase from previous year	32%	34%	35%	24%	20%	
Income before taxes	\$1,078	\$820	\$378	\$322	\$370	31%
• Percent increase (decrease) from previous year	31%	-	17%	(13%)	23%	
• Gross margin	12%	12%	8%	9%	13%	
Net income	\$1,070	\$814	\$378	\$322	\$370	30%
• Percent increase (decrease) from previous year	31%	115%	17%	(13%)	(36%)	
• Net margin	12%	12%	8%	9%	13%	
Earnings per share	\$0.22	\$0.17	\$0.08	\$0.08	\$0.09	25%
• Percent increase (decrease) from previous year	29%	113%	--	(11%)	(55%)	

Revenue increases in 1991 were attributed to a 43% increase in equipment sales, an 18% increase in software license revenue, and a 27% increase in software support and maintenance revenues.

- Increased equipment sales were primarily due to a higher volume of equipment sales to new laboratory system clients.
- Increased software and support revenue was due to the increase in new clients in 1991.

Sales and marketing expenditures were \$1.5 million (17% of revenue) in 1991, \$1.1 million (17% of revenue) in 1990, and \$1.1 million (22% of revenue) in 1989.

Actual software development expenditures (ignoring the effects of capitalization and amortization) were \$1.5 million (18% of revenue) in 1991 and \$1.0 million (16% of revenue) in 1990. The largest

development project during 1991 was the redesign of Terrano's anatomical surgical information retrieval systems (ANSIRS) for networked microcomputers.

Revenue for the three months ending March 31, 1992 reached nearly \$2.4 million, a 43% increase over \$1.7 million for the same period in 1991. Net income rose 28%, from \$112,458 to \$144,379. Five new contracts were signed during the quarter for ILS-5 Laboratory Information Systems and enhancement modules (three IBM AS/400-based and two Prime 50 Series-based systems).

Major competitors by product area include the following:

- Large hospital information system vendors: HBO & Company, Shared Medical Systems, and Medical Information Technology
- Laboratory information systems for DEC/HP: Cerper Corporation, Sunquest Information Systems, 3M Health Information Systems, Advanced Laboratory Systems, Antrim Corporation, and Dynacor
- Laboratory information systems with dedicated file servers: Citation, Laboratory Consulting, 3Net Systems, and Soft Computer Consultants

Key Products and Services

Approximately 84% of Terrano's 1991 revenue was derived from turnkey system sales. The remaining 16% was derived from software support and maintenance services. A three-year summary of source of revenue follows:

TERRANO CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

	FISCAL YEAR					
	1991		1990		1989	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Equipment sales	\$4.5	51%	\$3.1	47%	\$2.6	53%
Applications software licenses	2.8	33%	2.4	36%	1.5	31%
Software support and maintenance	1.4	16%	1.1	17%	0.8	16%
TOTAL	\$8.7	100%	\$6.6	100%	\$4.9	100%

Over 98% of total revenue during each of the last three years was derived from the ILS-5 product line and the remainder from the ARIS product line. The ARIS Radiology System is not actively being marketed but is fully supported and available to the company's existing laboratory system client base.

- Equipment sales occur in most new system sales and when existing clients upgrade and/or add to their ILS-5 Laboratory System hardware configuration. While the majority of Terrano's clients purchase their hardware from Terrano, some prefer to purchase directly from the manufacturer.
- Software license revenues occur with new system sales and when existing clients add application enhancement modules to their existing ILS-5 systems.

The ILS-5 Laboratory System for clinical laboratories was first introduced in 1982. The system is available for Prime 50 Series and IBM AS/400 Series computers.

- Approximately 20% of the existing client base operates systems on the AS/400 platform, and it is expected that this percentage will increase.
- The primary applications supported include:
 - Admission
 - Discharge
 - Transfer
 - Patient demographics
 - Order entry
 - Specimen collections
 - Section management
 - Results entry
 - Quality control
 - Laboratory productivity
 - Risk management/quality assurance
 - Results inquiry and reporting
 - Service billing
 - Bar coding
- Options include:
 - Advanced microbiology
 - Laboratory management
 - Advanced calculations
 - Preventive maintenance

- Transfusion service manager
 - ANSIRS (Anatomical Surgical Information Retrieval System)
 - Remote user network
 - Microcomputer interfaces
 - Distributed laboratory systems interface
- The ILS-5 Laboratory System is installed at 92 client sites.

ARIS (Advanced Radiology Information System) was designed for Prime 50 Series computers.

- Applications supported include:
- Patient registration and exam entry
 - Exam scheduling
 - Patient traffic control
 - Results reporting
 - Film location
 - Management reporting
 - Charge capture
 - Preventive maintenance
 - Department mail
 - Hospital system interfaces

The installation of a new client site can take anywhere from three to nine months or longer, depending on the system configuration (both hardware and software), the size and complexity of the client laboratory operation, and the timing requirements of the laboratory client.

Software maintenance and support is available from Terrano seven days a week, 24 hours a day. Hardware maintenance is provided directly by Prime Computer and IBM.

Industry Markets

One hundred percent of Terrano's 1991 revenue was derived from the medical industry.

While Terrano currently sells its systems to a range of clients, its growth strategy is to increase its market share by focusing resources on small to medium-sized hospitals (90 to 450 beds) and reference laboratories. In addition, the company will continue to seek license relationships with multi-facility health care providers.

Terrano's turnkey systems are installed in small rural community hospitals and large urban medical centers, as well as private

reference laboratories, hospital-based reference laboratories, networked multihospital sites, and group practice clinics.

One customer, Humana, contributed revenue of \$3.4 million (39% of total revenue) in 1991 and \$1.6 million (25% of total revenue) during 1990.

CaseCare contributed 14% and 10% to Terrano's 1991 and 1990 revenue, respectively.

Geographic Markets

One hundred percent of Terrano's 1991 revenue was derived from the U.S.

Terrano currently has 92 client sites in 30 states.

Computer Hardware and Software

Terrano has Prime and IBM AS/400 computers installed at its headquarters.

COMPANY PROFILE

TERRANO CORPORATION

245 South 84th Street
Lincoln, NE 68510
(402) 483-7831

James A. Terrano, President and CEO
Public Corporation, NASDAQ
Total Employees: 68
Total Revenue, Fiscal Year End
12/31/90: \$6,605,618

The Company

Terrano Corporation, founded in 1977, develops, markets, and supports integrated Prime and IBM AS/400-based turnkey systems for clinical laboratory and radiology applications to the health care industry. Terrano is a value-added reseller for Prime and during 1988 was named as an Industry Remarketer for the IBM AS/400.

- From 1981 to 1985, Terrano was involved in the development of a complete hospital information system product line that included systems for the ancillary departments of laboratory and radiology. During 1985, the company shifted its marketing, development, and product enhancement efforts to emphasize its ILS-5 Laboratory System and its ARIS Radiology System product families--both of which were fully operational. At the same time, Terrano discontinued its efforts to develop a complete hospital information system.
- From September 1985 to August 1986, Terrano operated as a debtor-in-possession under Chapter 11. In 1986, the company successfully completed its reorganization plan and has since regained its financial viability and profitability.
- In November 1988, Terrano completed a private placement of 800,000 shares of its common stock. Net proceeds of approximately \$900,000 were used to repay \$500,000 of long-term debt and to provide additional working capital.
- During 1990, the company's IBM AS/400-based ILS-5 beta site was brought to live operation and installation of three other AS/400-based sites was begun. The core AS/400 ILS-5 development work was completed during 1989.

Terrano's 1990 revenue reached \$6.6 million, a 34% increase over 1989 revenue of \$4.9 million. Net income rose 115%, from \$378,000 in 1989 to \$814,000 in 1990. A five-year financial summary follows:

**TERRANO CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR					
	1990	1989	1988	1987	1986	CAGR
Revenue	\$6,606	\$4,945	\$3,665	\$2,958	\$2,457	28%
• Percent increase (decrease) from previous year	34%	35%	24%	20%	(18%)	
Income before taxes	\$820	\$378	\$322	\$370	\$300	29%
• Percent increase (decrease) from previous year	117%	17%	(13%)	23%	111%	
• Gross margin	12%	8%	9%	13%	12%	
Net Income	\$814	\$378	\$322	\$370	\$581	9%
• Percent increase (decrease) from previous year	115%	17%	(13%)	(36%)	120%	
• Net margin	12%	8%	9%	13%	24%	
Earnings per share	\$0.17	\$0.08	\$0.08	\$0.09	\$0.20	N/A
• Percent increase (decrease) from previous year	113%	--	(11%)	(55%)	117%	

Revenue increases in 1990 were attributed to a 20% increase in equipment sales, a 61% increase in software license revenue, and a 27% increase in software support and maintenance revenues.

- Increased equipment sales were the result of a large increase in add-on and upgrade hardware sales to the company's existing client base.
- During the third quarter, Terrano reached a paid-up license agreement with Humana, Inc. The agreement grants a paid-up license to Humana for the ILS-5 and several of Terrano's laboratory system enhancement modules, which can be installed in any or all of the more than 90 hospitals Humana owns and operates. Humana has been a laboratory system client of Terrano since 1983. The licenses are to be paid in three annual installments beginning in 1990.
- During 1990, Terrano contracted for the sale of 11 new ILS-5 laboratory systems in addition to the paid-up license agreement

with Humana in 1990, as compared to 11 ILS-5 contracts in 1989 and eight in 1988.

Sales and marketing expenditures were \$1.1 million (17% of revenue) in 1990, \$1.1 million (22% of revenue) in 1989, \$834,620 (23% of revenue) in 1988, and \$532,036 (18% of revenue) in 1987.

Software development expenditures were \$683,618 (10% of revenue) in 1990, \$332,865 (7% of revenue) in 1989, \$192,291 (5% of revenue) in 1988, and \$244,803 (8% of revenue) in 1987.

Revenue for the three months ending March 31, 1991 reached nearly \$1.7 million, a 37% increase over \$1.2 million for the same period in 1990. Net income rose 2%, from \$109,787 to \$112,458.

- The major revenue sources during the first quarter of 1991, aside from software support and maintenance, included computer equipment for ILS-5 laboratory systems at two new Humana hospitals and a major equipment upgrade at another Humana hospital (all of which were sold under the company's 1990 paid-up license agreement with Humana).
- Terrano also sold an ILS-5 software license for the IBM AS/400 to another UniHealth hospital under its contract with CaseCare, Inc., the information systems subsidiary of UniHealth America.

Major competitors by product area include the following:

- Laboratory systems: MEDITECH, Community Health Computing, Cerner Corporation, Sunquest Corporation, HBO & Company, Shared Medical Systems Corporation, Advanced Laboratory Systems, and Citation Computer Systems.
- Radiology systems: DEC, ADAC Corporation, Trinity Computer Systems, and National Computer Systems.

Key Products and Services

Approximately 83% of Terrano's 1990 revenue was derived from turnkey system sales. The remaining 17% was derived from software support and maintenance services.

A three-year summary of source of revenue follows:

**TERRANO CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	1990		1989		1988	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Equipment sales	\$3.1	47%	\$2.6	52%	\$1.9	51%
Application software licenses	2.4	36%	1.5	30%	1.0	29%
Software support and maintenance	1.1	17%	0.8	17%	0.8	20%
TOTAL	\$6.6	100%	\$4.9	100%	\$3.7	100%

Over 98% of total revenue during each of the last three years was derived from the ILS-5 product line and the remainder from the ARIS product line. The ARIS Radiology System is not actively being marketed but is fully supported and available to the company's existing laboratory system client base. Terrano may reintroduce ARIS to the marketplace in 1991.

- Equipment sales occur in most new system sales and when existing clients upgrade and/or add to their ILS-5 Laboratory System hardware configuration. While the majority of Terrano's clients purchase their hardware from Terrano, some prefer to purchase directly from the manufacturer.
- Software license revenues occur with new system sales and when existing clients add application enhancement modules to their existing ILS-5 systems.

The ILS-5 Laboratory System for clinical laboratories was first introduced in 1982. The system is available for Prime 50 Series computers and, as of early 1989, for IBM AS/400 Series computers.

- The primary applications supported include:
 - Admission
 - Discharge
 - Transfer
 - Patient demographics

- Order entry
- Collections
- Section workaids
- Results entry
- Quality control
- Workload
- Results inquiry and reporting
- Billing
- Options include:
 - Advanced microbiology
 - Laboratory management
 - Advanced calculations
 - Preventative maintenance
 - Transfusion service manager
 - ANSIRS (Anatomical Surgical Information System)
 - Remote user network
 - Microcomputer interfaces
 - Distributed laboratory systems interface
- The ILS-5 Laboratory System is fully operational at 63 separate clients sites and installation is in progress at an additional eight sites.

ARIS (Advanced Radiology Information System) was designed for Prime 50 Series computers.

- Applications supported include:
 - Patient registration and exam entry
 - Exam scheduling
 - Patient traffic control
 - Results reporting
 - Film location
 - Management reporting
 - Charge capture
 - Preventive maintenance
 - Department mail
 - Hospital system interfaces

The installation of a new client site can take anywhere from three to nine months or longer, depending on the system configuration (both hardware and software), the size and complexity of the client laboratory operation, and the timing requirements of the laboratory client.

Software maintenance and support is available from Terrano seven days a week, 24 hours a day. Hardware maintenance is provided directly by Prime Computer and IBM.

Industry Markets

One hundred percent of Terrano's 1990 revenue was derived from the medical industry.

Terrano's turnkey systems are installed in small rural community hospitals and large urban medical centers, as well as private reference laboratories, hospital-based reference laboratories, networked multihospital sites, and group practice clinics.

One customer, Humana, contributed revenue of \$1.6 million (or 25% of total revenue) during 1990, 34% of revenue in 1989, and 13% of revenue in 1988.

CaseCare contributed 10% to Terrano's 1990 revenue.

Geographic Markets

One hundred percent of Terrano's 1990 revenue was derived from the U.S.

Terrano currently has 63 client sites in 26 states: Arizona, Alaska, California, Colorado, Florida, Georgia, Iowa, Indiana, Illinois, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Missouri, New Jersey, New Hampshire, North Dakota, Nebraska, New York, Ohio, Oklahoma, Rhode Island, South Dakota, Texas, and Wisconsin.

Computer Hardware and Software

Terrano has Prime and IBM AS/400 computers installed at its headquarters.

COMPANY PROFILE

TERRANO CORPORATION

245 South 84th Street
Lincoln, NE 68510
(402) 483-7831

James A. Terrano, President and CEO
Public Corporation, OTC
Total Employees: 53 (6/90)
Total Revenue, Fiscal Year End
12/31/89: \$4,944,790

The Company

Terrano Corporation, founded in 1977, develops, markets, and supports integrated Prime and IBM AS/400-based turnkey systems for clinical laboratory and radiology applications to the health care industry. Terrano is a value-added reseller for Prime and during 1988 was named as an Industry Remarketer for the IBM AS/400.

- From 1981 to 1985, Terrano was involved in the development of a complete hospital information system product line which included systems for the ancillary departments of laboratory and radiology. During 1985, the company shifted its marketing, development, and product enhancement efforts to emphasize its ILS-5 Laboratory System and its ARIS Radiology System product families--both of which were fully operational. At the same time, Terrano discontinued its efforts to develop a complete hospital information system.
- From September 1985 to August 1986, Terrano operated as a debtor-in-possession under Chapter 11. In 1986, the company successfully completed its reorganization plan and has since regained its financial viability and profitability.
- In November 1988, Terrano completed a private placement of 800,000 shares of its common stock. Net proceeds of approximately \$900,000 were used to repay \$500,000 of long-term debt and to provide additional working capital.

Terrano's 1989 revenue reached \$4.9 million, a 35% increase over 1988 revenue of \$3.7 million. Net income rose 17%, from \$322,000 in 1988 to \$378,000 in 1989. The compound annual growth rate for revenue from 1985 to 1989 was 14%. A five-year financial summary follows:

**TERRANO CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1989	1988	1987	1986	1985
Revenue	\$4,945	\$3,665	\$2,958	\$2,457	\$2,979
• Percent Increase (decrease) from previous year	35%	24%	20%	(18%)	(65%)
Income before taxes	\$378	\$322	\$370	\$300	\$(2,840)
• Percent Increase (decrease) from previous year	17%	(13%)	23%	111%	(676%)
• Gross margin	8%	9%	13%	12%	N/A
Net income (loss)	\$378	\$322	\$370	\$581 (a)	\$(2,840)
• Percent Increase (decrease) from previous year	17%	(13%)	(36%)	120%	(676%)
• Net margin	8%	9%	13%	24%	N/A
Earnings (loss) per share	\$0.08	\$0.08	\$0.09	\$0.20	\$(1.15)
• Percent Increase (decrease) from previous year	--	(11%)	(55%)	117%	(619%)

(a) Includes a gain on forgiveness of debt through reorganization, net of taxes, of \$280,505.

Revenue increases in 1989 were attributed to a 40% increase in system sales and licenses. Terrano contracted for and began and/or completed installation of 11 new ILS-5 sites during 1989 as compared to eight in 1988.

- During 1989, Terrano contracted for ten new Prime-based ILS-5 system installations. It also began the installation of the first IBM AS/400-based ILS-5 system at Memorial Hospital of Dodge County in Fremont (NE).
- During the year, Terrano signed a multiple-site system purchase, service, and license agreement with Casecare, Inc. (the information services subsidiary of UniHealth America) for the installation of up to seven IBM AS/400-based ILS-5 systems in their California and New Jersey affiliate hospitals.

Since 1987, the company has greatly expanded its sales and marketing efforts. These expenditures were \$1.1 million (22% of revenue) in 1989, \$834,620 (23% of revenue) in 1988, and \$532,036 (18% of revenue) in 1987.

Software development expenditures were \$332,865 (7% of revenue) in 1989, \$192,291 (5% of revenue) in 1988, and \$244,803 (8% of revenue) in 1987.

Major competitors by product area include the following:

- Laboratory systems: MEDITECH, Community Health Computing, Cerner Corporation, Sunquest Corporation, HBO & Company, and Shared Medical Systems Corporation.
- Radiology systems: DEC, ADAC Corporation, Trinity Computer Systems, and National Computer Systems.

Key Products and Services

Approximately 84% of Terrano's 1989 revenue was derived from turnkey systems sales. The remaining 16% was derived from software support and maintenance services.

A three-year summary of source of revenue follows:

TERRANO CORPORATION THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR					
	1989		1988		1987	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Systems sales and licenses	\$4.1	84%	\$2.9	79%	\$1.9	66%
Software support and maintenance	0.8	16%	0.8	21%	0.7	23%
Royalty fees (a)	--	--	--	--	0.3	11%
TOTAL	\$4.9	100%	\$3.7	100%	\$2.9	100%

(a) Includes royalties of \$330,000 from a limited exclusive distribution agreement for Terrano's ARIS Radiology System with Syntrex, Inc. (Eatontown, NJ).

Over 95% of total revenue during the last two years was derived from the ILS-5 product line and less than 5% was derived from the ARIS product line. The ARIS Radiology System is not actively being marketed but is fully supported and available to the company's existing laboratory system client base.

- System sales and license revenues are made up of equipment sales, software licenses, and installation charges under initial client contracts plus equipment upgrades and add-ons of peripheral equipment and application software enhancement modules.
- During the last two years, equipment sales have accounted for 60%-65% of systems sales and license revenue.

The ILS-5 Laboratory System for clinical laboratories was first introduced in 1982. The system is available for Prime 50 Series computers and, as of early 1989, for IBM AS/400 Series computers.

- Applications supported include:
 - Demographics
 - Order entry
 - Collection
 - Quality control
 - Management reporting
 - Manual result entry
 - Automated result entry
 - Patient reporting
 - Workload recording
 - Instrument interfaces
 - ADT system interfaces
 - Financial systems interfaces
 - Patient care systems interfaces
 - Collection lists
 - Checklists
 - Holdover logs
 - Ward reports
 - Management reports
 - Outpatient reports
 - Interim reports
 - Cumulative reports
 - Discharge reports
 - Abnormal results reports

- Options include:
 - Advanced microbiology
 - Section management
 - Laboratory management
 - Advanced calculations
 - Advanced formatter
 - ANSIRS (Anatomical Surgical Information System)
 - Blood bank/transfusion service
 - Financial management
 - Microcomputer interfaces

ARIS (Advanced Radiology Information System) is currently available for Prime 50 Series computers.

- Applications supported include:
 - Patient registration and exam entry
 - Exam scheduling
 - Patient traffic control
 - Results reporting
 - Film location
 - Management reporting
 - Charge capture
 - Preventive maintenance
 - Department mail
 - Hospital system interfaces

The installation of a new client site can take anywhere from three to nine months or longer, depending on the system configuration (both hardware and software), the size and complexity of the client laboratory operation, and the timing requirements of the laboratory client.

Software maintenance and support is available from Terrano seven days a week, 24 hours a day. Hardware maintenance is provided directly by Prime Computer and IBM.

Industry Markets

One hundred percent of Terrano's 1989 revenue was derived from the medical industry.

The target market for Terrano's turnkey systems includes clinical laboratory and radiology laboratory departments of public and private hospitals and private reference laboratories.

**Geographic
Markets**

One hundred percent of Terrano's 1989 revenue was derived from the U.S.

Terrano currently has 58 client sites in 26 states, including Arizona, Alaska, California, Colorado, Florida, Georgia, Iowa, Indiana, Illinois, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Missouri, New Jersey, New Hampshire, North Dakota, Nebraska, New York, Ohio, Oklahoma, Rhode Island, South Dakota, Texas, and Wisconsin.

**Computer
Hardware and
Software**

Terrano has Prime and IBM AS/400 computers installed at its headquarters.

COMPANY PROFILE

TERRANO CORPORATION

245 South 84th Street
Lincoln, NE 68510
(402) 483-7831

James A. Terrano, President and CEO
Public Corporation, OTC
Total Employees: 37 (3/89)
Total Revenue, Fiscal Year End
12/31/88: \$3,665,484

The Company

Terrano Corporation, founded in 1977, develops, markets, and supports integrated Prime and IBM AS/400-based turnkey systems for clinical laboratory and radiology applications to the health care industry. Terrano is a value-added reseller for Prime and during 1988 was named as an Industry Remarketer for the IBM AS/400.

- During 1981 to 1985, Terrano was involved in the development of a complete hospital information system product line which included systems for the ancillary departments of laboratory and radiology. During 1985, the company shifted its marketing, development, and product enhancement efforts to emphasize its ILS-5 Laboratory System and its ARIS Radiology System product families--both of which were fully operational. At the same time, Terrano discontinued its efforts to develop a complete hospital information system.
- From September 1985 to August 1986, Terrano operated as a debtor-in-possession under Chapter 11. In 1986, the company successfully completed its reorganization plan.
- In November 1988, Terrano completed a private placement of 800,000 shares of its common stock. Net proceeds of approximately \$900,000 were used to repay \$500,000 of long-term debt and to provide additional working capital.

Terrano's 1988 revenue reached nearly \$3.7 million, a 24% increase over 1987 revenue of \$3.0 million. Net income declined 13%, from \$370,000 in 1987 to \$322,000 in 1988. A five-year financial summary follows:

**TERRANO CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1988	1987	1986	1985	1984
Revenue	\$3,665	\$2,958	\$2,457	\$2,979	\$8,436
• Percent increase (decrease) from previous year	24%	20%	(18%)	(65%)	65%
Income before taxes	\$322	\$370	\$300	\$(2,840)	\$(366)
• Percent increase (decrease) from previous year	(13%)	23%	111%	(676%)	76%
Net income (loss)	\$322	\$370	\$581 (a)	\$(2,840)	\$(366)
• Percent increase (decrease) from previous year	(13%)	(36%)	120%	(676%)	76%
Earnings (loss) per share	\$0.08	\$0.09	\$0.20	\$(1.15)	\$(0.16)
• Percent increase (decrease) from previous year	(11%)	(55%)	117%	(619%)	81%

(a) Includes a gain on forgiveness of debt through reorganization, net of taxes, of \$280,505.

During 1988, Terrano contracted for the sale of eight new ILS-5 Laboratory Systems plus three major hardware upgrades to existing client systems. During 1987, the company contracted for the sale of four ILS-5 Laboratory Systems and one ARIS Radiology System. Terrano management attributes revenue increases during the last two years to the following:

- The company has regained its financial viability because of its 1986 reorganization and its profitability since that date.
- Since 1987, the company has greatly expanded its sales and marketing efforts. These expenditures were \$834,620 (23% of revenue) in 1988, compared to \$532,036 (18% of revenue) in 1987, and \$305,762 (12% of revenue) in 1986.

Software development expenditures were \$192,291 (5% of revenue) in 1988, \$244,803 (8% of revenue) in 1987, and \$279,654 (11% of revenue) in 1986.

Major competitors by product area include the following:

- Laboratory systems: MEDITECH, Community Health Computing, Cerner Corporation, Sunquest Corporation, HBO & Company, and Shared Medical Systems Corporation.
- Radiology systems: DEC, ADAC Corporation, Trinity Computer Systems, and National Computer Systems.

Key Products and Services

Approximately 79% of Terrano's 1988 revenue was derived from turnkey systems sales. The remaining 21% was derived from software support and maintenance services.

A three-year summary of source of revenue follows:

TERRANO CORPORATION THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ millions)

	FISCAL YEAR					
	1988		1987		1986	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Systems sales and licenses	\$2.9	79%	\$1.9	66%	\$1.7	70%
Software support and maintenance	0.8	21%	0.7	23%	0.7	30%
Royalty fees (a)	--	--	0.3	11%	--	--
TOTAL	\$3.7	100%	\$2.9	100%	\$2.4	100%

(a) Includes royalties of \$330,000 from a limited exclusive distribution agreement for Terrano's ARIS Radiology System with Syntrex, Inc. (Eatontown, NJ).

Approximately 99% of Terrano's 1988 revenue was derived from its ILS-5 Laboratory System and 1% from the ARIS Radiology System. During 1987, approximately 76% of revenue was derived from the ILS-5 Laboratory System and 24% from the ARIS Radiology System.

The ILS-5 Laboratory System for clinical laboratories was first introduced in 1982.

- The system is available for Prime 50 Series computers and, as of early 1989, for IBM AS/400 Series computers.

- Applications supported include:
 - Demographics
 - Order entry
 - Collection
 - Quality control
 - Management reporting
 - Manual result entry
 - Automated result entry
 - Patient reporting
 - Workload recording
 - Instrument interfaces
 - ADT system interfaces
 - Financial systems interfaces
 - Patient care systems interfaces
 - Collection lists
 - Checklists
 - Holdover logs
 - Ward reports
 - Management reports
 - Outpatient reports
 - Interim reports
 - Cumulative reports
 - Discharge reports
 - Abnormal results reports.
- Options include:
 - Advanced microbiology
 - Section management
 - Laboratory management
 - Advanced calculations
 - Advanced formatter
 - ANSIRS (Anatomical Surgical Information System)
 - Blood bank/transfusion service
 - Financial management
 - Microcomputer interfaces
- There are currently over 50 Prime-based ILS-5 Laboratory Systems installed. In April 1989, Terrano announced its first sale of an ILS-5 Laboratory System based on an IBM AS/400 to Memorial Hospital of Dodge County (Fremont, NE).

ARIS (Advanced Radiology Information System) is currently available for Prime 50 Series computers.

- Applications supported include:

- Patient registration and exam entry
 - Exam scheduling
 - Patient traffic control
 - Results reporting
 - Film location
 - Management reporting
 - Charge capture
 - Preventative maintenance
 - Department mail
 - Hospital system interfaces
- There are currently three systems installed.

Software maintenance and support is available from Terrano seven days a week, 24 hours a day. Hardware maintenance is provided directly by Prime Computer and IBM.

Industry Markets

One hundred percent of Terrano's 1988 revenue was derived from the medical industry.

The target market for Terrano's turnkey systems includes clinical laboratory and radiology laboratory departments of public and private hospitals and private reference laboratories.

Geographic Markets

One hundred percent of Terrano's 1988 revenue was derived from the U.S.

Computer Hardware and Software

Terrano has the following computers installed at its headquarters:

- 1 Prime 75, PRIMOS
- 1 Prime 550, PRIMOS
- 1 Prime 2250, PRIMOS

COMPANY PROFILE

TERRANO CORPORATION
245 South 84th Street
Lincoln, NE 68510
(402) 483-7831

James A. Terrano, President
Public Corporation, OTC
Total Employees: 21
Total Revenue, Fiscal Year End
12/31/86: \$2,456,616

THE COMPANY

- Terrano Corporation, founded in 1977, provides Prime-based turnkey clinical laboratory and radiology systems and associated software maintenance services to the health care industry. All hardware maintenance is provided by Prime Computer.
- During 1985 the amount of capital available to Terrano was inadequate to sustain operations. Consequently, in September 1985, the company filed for protection from its creditors under Chapter 11. On August 25, 1986, a Plan of Reorganization was accepted by the company's creditors and was confirmed by the U.S. Bankruptcy Court.
- Terrano's 1986 revenue was \$2.5 million, an 18% decrease from 1985 revenue of nearly \$3 million. Net income for 1986 was \$581,000, compared to net losses of \$2.8 million for 1985. A five-year financial summary follows:

TERRANO CORPORATION

TERRANO CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

Fiscal Year Item	1986	1985	1984	1983	1982
Revenue	\$ 2,457	\$ 2,979	\$ 8,436	\$ 5,100	\$ 2,701
• Percent increase (decrease) from previous year	(18%)	(65%)	65%	89%	N/A
Income (loss) before taxes	\$ 300	\$ (2,840)	\$ (366)	\$ (1,552)	\$ (504)
• Percent increase (decrease) from previous year	111%	(676%)	76%	(208%)	N/A
Net income (loss)	\$ 581(a)	\$ (2,840)	\$ (366)	\$ (1,552)	\$ (504)
• Percent increase (decrease) from previous year	120%	(676%)	76%	(208%)	N/A
Earnings (loss) per share	\$ 0.20	\$ (1.15)	\$ (0.16)	\$ (0.85)	\$ (0.40)
• Percent increase (decrease) from previous year	117%	(619%)	81%	(113%)	N/A%

- (a) 1986 net income includes a gain on forgiveness of debt through reorganization, net taxes, of \$140,505 and a utilization of net loss carryforwards of \$290,000.
- Operating revenues decreased 18% and 65% during 1986 and 1985, respectively.
 - The 1986 decrease was primarily the result of decreased unit sales of the company's ILS-5 Laboratory Computer System (a decrease of \$410,818 or 20%) and a decrease in equipment sales to other software vendors for resale (a decrease of \$411,805 or 100%), less an increase of revenues from maintenance service contracts (an increase of \$324,820 or 77%).
 - The decline in unit sales of ILS-5 during 1986 resulted because Terrano operated as a debtor-in-possession under Chapter 11 for the first eight months of 1986 and found it extremely difficult to sell its systems to new clients. During an 11-month period, Terrano installed only one ILS-5 system.

TERRANO CORPORATION

- From 1983 through mid-1985, the company participated in a subdistributor program sponsored by Prime. The company abandoned this program in June 1985 due to the low margins on sales which resulted in the decrease of revenues realized from sales of equipment for resale during 1986.
- At the end of the third quarter of 1985, the company restructured all its software maintenance service contracts with existing clients in an effort to bring service revenues in line with service costs. This had the effect of substantially increasing the revenues realized from software maintenance service contracts during 1986.
- The decline in revenues during 1985 was the result of very substantial declines of both unit sales of the ILS-5 system and of sales of equipment under the subdistributor program. A steady decline in the company's working capital position during 1985 caused many prospective purchasers of the ILS-5 system to defer their decision to purchase until Terrano was able to secure additional equity capital. No additional equity capital was raised during 1985 which caused Laboratory System revenue to decline sharply. No revenues from the subdistributor program were realized by Terrano after June 30, 1985.
- Terrano management attributes 1986 earnings to a 62% reduction in operating expenses and an 80% reduction in other deductions as compared to 1985.
 - Operating losses for 1985 were primarily the result of the \$5.5 million decline in revenue and a \$771,483 provision for doubtful accounts receivable in 1985.
- Since its inception through the third quarter of 1985, Terrano was committed to the development and enhancement of turnkey laboratory, radiology, and hospital systems. In September 1985, the company changed its focus away from the development of turnkey hospital system products while continuing its efforts to develop and enhance turnkey laboratory and radiology system products.
 - This shift included the layoff of all personnel dedicated to hospital systems development, which comprised the majority of the software development staff.
 - These changes account for the reduction of software development costs to \$279,654 in 1986 from \$1.1 million in 1985, and \$1.4 million in 1984.
- Revenue for the nine months ending September 30, 1987, was \$1.9 million, compared to \$1.8 million for the same period in 1986. Net income was \$95,507, compared to net income of \$342,779 (which includes an extraordinary gain of \$128,000 for forgiveness of debt) for the same period a year ago.
- As of December 31, 1986, Terrano had 21 employees. The company currently has approximately 23 employees, segmented as follows:

TERRANO CORPORATION

Marketing/sales	4
Customer support	8
Research and development	7
General and administrative	<u>4</u>
	23

- Major competitors by product area include:
 - Laboratory systems: Control Data Corporation (Medlab Division), Community Health Computing, Cerner Corporation, Sunquest Corporation, HBO & Co., and Rubicon, Inc.
 - Radiology systems: ADAC Corporation, Trinity Computer Systems, and National Computer Systems.

KEY PRODUCTS AND SERVICES

- One hundred percent of Terrano's 1986 revenue was derived from turnkey systems sales and associated software support services. Approximately 35% of revenue came from software, 35% from hardware, and 30% from software maintenance and support services.
- Terrano markets the following turnkey systems that are based on Prime 50 series computers:
 - The ILS-5 Laboratory Computer System for clinical laboratories was first introduced in 1982.
 - Features include:
 - Demographics.
 - Order Entry.
 - Collection.
 - Quality Control.
 - Management Reporting.
 - Manual Result Entry.
 - Automated Result Entry.
 - Patient Reporting.
 - Workload Recording.
 - Instrument Interfaces.
 - ADT Systems Interfaces.
 - Financial Systems Interfaces.
 - Patient Care Systems Interfaces.
 - Collection Lists.
 - Checklists.
 - Holdover Logs.
 - Ward Reports.
 - Management Reports.

TERRANO CORPORATION

- Outpatient Reports.
- Interim Reports.
- Cumulative Reports.
- Discharge Reports.
- Abnormal Results Reports.
- . Options include:
 - Advanced Microbiology.
 - Section Management.
 - Laboratory Management.
 - Advanced Calculations.
 - Advanced Formatter.
 - ANSIRS (Anatomical Surgical Information Retrieval System).
 - Blood Bank.
 - Financial Management.
 - Microcomputer Interfaces.
- . There are currently approximately 40 systems installed.
- . Clients added in 1987 to date include Humana Hospital - Phoenix (Phoenix, AZ) and Holy Family Hospital (Des Plaines, IL).
- ARIS (Advanced Radiology Information System) is targeted to radiology departments.
 - . Modules include:
 - Patient Registration and Exam Entry.
 - Exam Scheduling.
 - Patient Traffic Control.
 - Results Reporting.
 - Film Location.
 - Management Reporting.
 - Charge Capture.
 - Preventive Maintenance.
 - Departmental Mail.
 - Hospital Systems Interfaces.
 - . There are currently two systems installed.
 - . During September 1987, Terrano announced the sale of an ARIS system to Q & R Clinic of Bismarck (ND).
- Software maintenance and support is available from Terrano 7 days a week, 24 hours a day. Hardware maintenance is provided directly by Prime Computer.

TERRANO CORPORATION

INDUSTRY MARKETS

- One hundred percent of Terrano's 1986 revenue was derived from the medical industry.
- The target market for Terrano's turnkey systems includes clinical laboratory and radiology departments of hospitals with 100 or more beds.

GEOGRAPHIC MARKETS

- One hundred percent of Terrano's 1986 revenue was derived from the U.S.
- The company has clients in 19 U.S. states including Alaska, Arizona, California, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, New Jersey, New York, North Dakota, Oklahoma, Rhode Island, and South Dakota.
- Branch offices are located in Chicago, San Francisco, and Cleveland.

COMPUTER HARDWARE AND SOFTWARE

- Terrano has the following computers installed at its headquarters:
 - 1 Prime 75, PRIMOS.
 - 1 Prime 550, PRIMOS.
 - 1 Prime 2250, PRIMOS.

COMPANY PROFILE

TESSERACT CORPORATION

475 Sansome Street
San Francisco, CA 94111
Phone: (415) 981-1800
Fax: (415) 981-4600

President & CEO: Woodson M. Hobbs
Status: Private
Total Employees: 200 (12/93)
Total Revenue: \$31,500,000*
Fiscal Year End: 12/31/93

* INPUT estimate

Key Points

- Tesseract offers a fully integrated set of human resource software products built around a common relational database for integrity and ease of use and supporting cooperative processing via centralized, client/server or fully distributed architectures.
- During 1993, Tesseract announced its second generation of client/server products, delivering true, distributed technology through user interfaces supporting Windows, OS/2 and Motif. The products support databases from IBM, Oracle and Sybase running on Windows, UNIX OS2 and Netware operating systems. The products are scheduled for availability during 1994.
- In March 1993, Prudential Insurance Corporation sold its controlling interest in Tesseract to a group of investors led by Feibusch & Co. Prudential retains a significant stake in Tesseract and remains one of its largest customers.

**Company
Description**

Tesseract provides human resource management systems (HRMS) applications software products and professional services for IBM cooperative environments, supporting mainframe, client/server and distributed platforms. There are currently more than 400 products implemented for more than 150 customers nationwide.

- Tesseract was formed in 1970 as a private company to provide data processing education, consulting and custom development services in the area of human resource applications to IBM mainframe users. The company introduced its first product in 1975.
- Tesseract became a wholly owned subsidiary of Prudential Insurance Corporation in 1986.
- In March 1993, Prudential sold controlling interest in Tesseract to a group of investors led by Feibusch & Co.
 - Prudential retained a significant stake in Tesseract, is represented on Tesseract's Board of Directors and remains one of Tesseract's largest customers for both internal use and external servicing.
 - The purposes of the transaction were to create employee ownership and incorporate a group of knowledgeable investors.
 - Subsequent to the transaction, Tesseract had no debt and none of Tesseract's substantial cash resources were used in the purchase of stock by Tesseract's investors.

Strategy

Tesseract's mission is *"To be the premier provider of computer-based human resource solutions for sophisticated customers."*

The company's strategy is to offer its products centralized, client/server and distributed architectures.

- The company has, historically, provided its software primarily for IBM and compatible mainframe databases and operating systems and will continue to support these users.
- Tesseract also will support current and prospective customers that are downsizing or rightsizing hardware for some applications through its client/server and distributed products.

Financials

INPUT estimates Tesseract's 1993 revenue was \$31.5 million, compared to 1992 revenue of \$31.9 million. A four-year revenue summary follows:

**TESSERACT CORPORATION
FOUR-YEAR REVENUES SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR			
	1993	1992	1991	1990
Revenue	\$31.5*	\$31.9	\$25.0	\$18.5
Percent increase from previous year	--	28%	35%	N/A

* INPUT estimate

Revenue remained relatively flat during 1993 due to new management, product direction change and market confusion concerning client/server.

Market Financials

Tesseract's revenue is derived from clients across industries, including banking, insurance, health care, manufacturing and utilities.

- Currently 30% of the Fortune 100 companies are Tesseract customers.
- Tesseract also has a large number of customers among Fortune 500 and 2000 corporations.

As corporate human resource departments are becoming more sophisticated, Tesseract's new customers are increasingly being generated from mid-sized companies. Clients range in size from 950 to 565,000 employees.

Geographic Markets

Approximately 95% of Tesseract's 1993 revenue was derived from the U.S. and 5% from international sources, primarily Canada.

Key Products and Services

Approximately 60% of Tesseract's 1993 revenue was derived from applications software products and associated maintenance services, and 40% from professional services consulting.

Software Products:

Tesseract's HRMS products include the following:

- Benefit/Flexible Benefit Plan Administrator (BPAS) contains functions to cover all aspects of benefit and flexible benefit administration, including nondiscrimination testing, COBRA, tax reform and legislative compliance, eligibility processing, participation reporting, billing and carrier reporting.
- Investment Plan Manager (IPM) handles all of the administration, reporting and analysis requirements for 401(a), 401(k), IRAs, Employee Stock Ownership programs, savings and other defined contribution programs.
- Human Resource Manager (HRM) functions include employee identification, government compliance, applicant and skills tracking, education, training and development, salary planning, compensation, position control, health and safety.
- Payroll System (PAY) provides earning control, tax administration, Canadian taxes, deduction control, on-line checks, accrual control, labor distribution, payroll accounting and inquiry, time reporting, batch processing and payroll reporting.
- Claims Processing System (CPS) processes all types of medical, drug, dental, vision and hospital claims. CPS also provides analysis and health care cost containment through case management, COB, claims capture and correspondence.
- Retirement Plan Manager (RPM) provides administration functions for defined benefit plans, including historical earnings and hours recordkeeping, service calculation, social security benefit calculations, final average earnings and benefits calculations.

Tesseract products are available for centralized, client/server and fully distributed platforms.

- The products support the major IBM mainframe database management systems, including DB2. Cooperatively, Tesseract's Enterprise Server allows data to be distributed to users running OS/2 or Windows 3.0, as well as nonprogrammable terminals.
- Tesseract's first generation of client/server products consists of three products that can be used individually, or in combination, to enable any customer to distribute functions and data and integrate and develop companion applications.

- INFO CENTER 1.1 distributes a replica or subset of a production database to a relational database on UNIX, Windows NT, OS/2 or Netware servers for querying, reporting, charting, analysis, project management etc. INFO CENTER is for customers who wish to distribute data to lower the cost of querying and reporting, while remaining integrated with more centralized servers for higher-performance, transaction-oriented products like Payroll, Benefits and Claims.
- INTUITION 4.0 supports Windows and OS/2 and provides a graphical user interface to Tesseract's mainframe server products.
- PRIMROSE 1.2 provides tools for building fully distributed applications that can query centralized or distributed relational databases.
- HR Solutions Center is a package of application solutions, tools and services for Tesseract customers to enhance mainframe HRMSs with client/server applications. The solutions are delivered as templates and are adapted to an organization's unique requirements using the Primrose tool and packaged implementation services.
- The Tesseract HR InfoCenter provides access to Tesseract's integrated human resource database through a distributed client/server environment for easy, low-cost querying and reporting by users.
- HR InfoCenter establishes a read-only reporting subset of the central HR database on LAN-based UNIX, Windows NT or OS/2 servers for querying, reporting, charting, analysis and product management on desktop workstations.
- HR InfoCenter supports databases from IBM, Oracle and Sybase running on Windows, UNIX, OS2 and Netware operating systems, as well as symmetric multiprocessing operating systems like Windows NT and Pyramid SMP.

Software pricing for HR applications is based on the size of a company's employee population.

- The annual maintenance fee is a percentage of the current license price for an application.
- Support for customers with client/server environments and client/server migration issues will come primarily from Tesseract's Consulting Services Division.

Support Services:

Tesseract provides each software customer with a complete set of on-site training programs, an account manager to coordinate all Tesseract resources, a regional helpline, a central hotline, consulting, product planning, performance tuning, product adaptation and development services.

The Tesseract Consulting Services Division, formed in 1990, is made up of three teams as follows:

- Implementation Consulting Services furnishes additional implementation support to Tesseract's software customers and provides additional skill sets to meet customers' needs, including systems requirements definition, database design and set-up, conversion and interface programs and customized programs and reports.
- The General Consulting Services Team provides consulting for projects that require additional business and technical consulting, user exit designs, conversions, interfaces or custom programming.
- Systems Integration Consulting assists customers in migrating from mainframe applications toward enterprise-wide distributed solutions.

Pricing for these support services is on a per-project basis.

**Marketing
and Sales**

Tesseract markets its products and services in the U.S. and Canada through a direct sales force.

In addition to its headquarters in San Francisco, Tesseract has regional offices in Chicago, Dallas and Paramus (NJ). The regional offices are staffed with customer services, sales and product specialists.

Alliances

Tesseract has been an IBM Business Partner for SAA since 1987. Tesseract continues to work closely with IBM to ensure that Tesseract HRMS products fully comply with IBM's SAA strategy.

In addition to its business partnership with IBM, Tesseract has marketing agreements with Microsoft, Walker Interactive Systems, Price Waterhouse and Report Smith Inc.

Clients

Tesseract customers include American Airlines, Arkla, Inc., Baxter-Healthcare Corporation, Bristol-Myers Squibb, Chevron Corporation, City of Long Beach, Deere & Co., General Mills, Kaiser Permanente, Lockheed Missiles & Space Co., Prudential Securities, Inc., Bank of America, Texas Utilities and Wells Fargo Bank.

Competitors

Tesseract's primary competitors include Integral Systems, PeopleSoft, D&B Software, GENESYS, SAP America and Computer Associates.

**INPUT
Assessment**

Tesseract's major strengths include its distributed computing architecture, strong customer base and financial stability. Tesseract has 10 customers that have been clients for more than 10 years and 65 customers that have been clients between 5 and 10 years.

Tesseract's key challenge for 1994 is to deliver its distributed computing HR applications and address the confusion over client/server.

- Because Tesseract has chosen to provide support and a migration path for its existing customer base, its distributed applications are coming to market in 1994 rather than last year.
- The company states that its customers have not pushed Tesseract to provide client/server features more quickly because the reality for many large companies is that they are not yet ready to move mission-critical applications from the mainframe. Rather, they want to move more slowly and work with a vendor that will provide them with distributed capabilities on an "as needed" basis.
- Tesseract's product rollout in 1994 will allow running applications on a variety of platforms and in combination, incorporating mainframe, LAN server or both. This ability permits clients to run certain HR applications on departmental LAN servers, but (for security or processing reasons), continue to integrate that data with mainframe-based payroll or other applications.



COMPANY PROFILE

TESSERACT CORPORATION

150 Spear Street
San Francisco, CA 94105-1539
(415) 543-9320

William R. Leckonby, President
Subsidiary of Prudential Insurance
Company

Total Employees: 250 (12/90)
Total Revenue, Fiscal Year End
12/31/90: \$25,000,000*

*INPUT estimate

The Company

Tesseract Corporation provides human resource management systems (HRMS) application software products and professional services for IBM cooperative environments. There are currently more than 400 Tesseract product installations nationwide.

- Tesseract was formed in 1970 as a private company to provide data processing education, consulting, and custom development services in the area of human resource applications to IBM mainframe users. The company introduced its first product in 1975.
- In 1986, Tesseract became a wholly owned subsidiary of The Prudential Insurance Company, providing Tesseract with increased resources, an exchange of legislative and human resource information, and product expansion.
- During 1987, Tesseract was named an IBM Business Partner for SAA. Tesseract continues to work closely with IBM to ensure that the Tesseract HRMS products fully comply with IBM's SAA strategy.
- In addition to its business partnership with IBM, Tesseract has marketing agreements with Microsoft, Walker Interactive Systems, and Price Waterhouse.

Tesseract management attributes revenue growth to expanded new sales, development contracts, and its emerging consulting business.

Tesseract's primary competitors include Integral Systems, PeopleSoft, D&B Software, GENESYS, and Computer Associates.

Key Products and Services

Approximately 60% of Tesseract's 1990 revenue was derived from application software products and associated maintenance services, and 40% from professional services consulting.

Tesseract's HRMS products include the following:

- **Benefit/Flexible Benefit Plan Administrator (BPAS)** contains functions to cover all aspects of benefit and flexible benefit administration, including non-discrimination testing, COBRA, tax reform and legislative compliance, eligibility processing, participation reporting, billing, and carrier reporting.
- **Investment Plan Manager (IPM)** handles all of the administration, reporting, and analysis requirements for 401(a), 401(k), IRAs, Employee Stock Ownership programs, savings, and other defined contribution programs.
- **Human Resource Manager (HRM)** functions include employee identification, government compliance, applicant and skills tracking, education, training and development, salary planning, compensation, position control, health, and safety.
- **Payroll System (PAY)** provides earning control, tax administration, Canadian taxes, deduction control, on-line checks, accrual control, labor distribution, payroll accounting and inquiry, time reporting, batch processing, and payroll reporting.
- **Claims Processing System (CPS)** processes all types of medical, drug, dental, vision, and hospital claims. CPS also provides analysis and health care cost containment through case management, COB, claims capture, and correspondence.
- **Retirement Plan Manager (RPM)** provides administration functions for defined benefit plans, including historical earnings and hours recordkeeping, service calculation, social security benefit calculations, final average earnings, and benefits calculations.
- **HRMS Intuition** is a cooperative processing workstation that allows users to access the Tesseract HRMSs and human resource data through a graphical interface. HRMS is fully SAA compliant, using the interfaces OS2/EE and Presentation Manager, and is completely integrated with IBM's OfficeVision.
- **The HRMS Executive Decision Series** of products, announced in 1990, is an advanced set of knowledge-based intelligent query options designed to assist managers in making business decisions.

- HR Action, the first workstyle solution in the series, allows human resource professionals to establish criteria or conditions, and then monitors these conditions and reports when thresholds occur. HR Action is an SAA-compliant set of functions that integrates with IBM OfficeVision and Tesseract's HRMS Intuition.
- Future components of the Executive Decision Series under development include performance evaluation, recruiting, and workflow management.
- HRMS Express is a set of human resource applications developed to require less time and fewer programming resources to implement than traditional systems.
- The system integrates human resource management, payroll, benefits plan, and flexible benefits plan administration.
- HRMS Express provides a single data base of information on all employees. It also offers predefined table entries and code sets, established screen definitions, and implementation aides to accelerate the system's implementation cycle.
- HRMS Express runs on IBM mainframes under DOS and MVS, and cooperatively under OS/2 and DOS 3.0. Pricing starts at \$75,000.

All Tesseract products support the major IBM mainframe data base management systems, including DB2.

- Cooperatively, Tesseract's Enterprise Service allows data to be distributed to users running OS/2 or Windows 3.0 as well as non-programmable terminals.
- For report writing and query, users can access a set of standard COBOL reports, use an existing report writer (such as FOCUS, MARK IV, RAMIS, NOMAD, or Easytrieve), or use Tesseract's IMAGINE in the CICS environment.

Tesseract provides each software customer with a complete set of on-site training programs, an account manager to coordinate all Tesseract resources, a regional helpline, a central hotline, consulting, product planning, performance tuning, product adaption, and development services.

The Tesseract Consulting Services Division, formed in 1990, is made up of two teams as follows:

- Implementation Consulting Services provides additional implementation support to Tesseract's software customers as well as providing additional skill sets to meet customers' needs, including systems requirements definition, data base design and set-up, conversion and interface programs, and customized programs and reports.
- The General Consulting Services Team provides consulting for projects that require additional business and technical consulting, user exit designs, conversions, interfaces, or custom programming.

Industry Markets

Tesseract's revenue is derived from clients across industries, including banking, insurance, health care, manufacturing, and utilities.

- Currently 30% of the Fortune 100 companies are Tesseract customers.
- Tesseract also has a large number of customers among Fortune 500 and 2000 corporations.

Tesseract customers include American Airlines, Arkla, Inc., Baxter-Healthcare Corporation, Bristol-Myers Squibb, Chevron Corporation, City of Long Beach, General Mills, Kaiser Permanente, Lockheed Missiles & Space Co., Prudential Securities, Inc., C&S/Sovran, Texas Utilities, and Wells Fargo Bank.

As corporate human resource departments are becoming more sophisticated, Tesseract's new customers are increasingly coming from mid-sized companies.

Geographic Markets

Approximately 99% of Tesseract's 1990 revenue was derived from the U.S. and 1% from Canada.

Tesseract markets its products and services in the U.S. and Canada through a direct sales force.

In addition to its headquarters in San Francisco, Tesseract has regional offices in Boston, Chicago, Dallas, and Paramus (NJ). The regional offices are staffed with customer services, sales, and product specialists.

Dropped

COMPANY HIGHLIGHT

TESSERACT CORPORATION
P.O. Box 7658
Rincon Annex
San Francisco, CA 94120
(415) 543-9320

Gary Durbin, President
Private corporation
Total employees: 32
Total revenues, fiscal year
end, 7/31/77: \$1,000,000*

THE COMPANY

- Tesseract Corporation was founded in January 1971 by Gary Durbin (President) and Peter Lamasney (Senior Vice President) to provide consulting and technical education services. The word "tesseract" means a four dimensional cube.
- Since then, Tesseract has added on-line systems development, systems software and (most recently) on-line applications software to its product line. Clients are mainly banks and insurance companies.
- Management plans to aggressively continue the company's move into on-line applications software products for the insurance and health insurance industry. Two acquisitions in 1977 added applications packages for the insurance industry:
 - Life Equity Information markets a flexible premium and variable annuity software package.
 - Deltanet, jointly acquired from Health Applications Systems by Tesseract (20%) and Brandon Applied Systems (80%), offers dental claims insurance processing services to insurance companies. Tesseract provides the software support; Brandon provides the computer center and financial backing.
- Two out of the staff of 32 are currently in sales.

KEY PRODUCTS AND SERVICES

- Tesseract revenues are fairly evenly divided between professional services and software product sales.
 - The professional services are primarily on-line systems design and implementation. Contract programming for applications or systems software and courses in IBM operating systems are also available. Tesseract has developed banking software systems including commercial loan, real estate loan, DDA, on-line teller inquiry, savings, and automatic teller machine software.

*INPUT estimate

COMPANY HIGHLIGHT/TESSERACT CORPORATION

- Both systems and applications software products are marketed by the company.
- The systems products are:
 - SMR (System Management Reporting System) with four installations. SMR is a computer usage and cost distribution system.
 - DAS I and II (Data Access Security System) with 38 installations. DAS authorizes jobs to access protected data sets by building passwords from the Job Control Language. The passwords are only available to the installation's security officer. DAS II is available for IBM systems running under OS/MFT, VS, MVT, MVS or SVS. DAS was sold to Boole & Babbage, Inc., Sunnyvale, California on October 10, 1977.
- The applications software packages are:
 - On-line Plan Administration System. With two installations, PAS offers data base management of Insurance Plan Administration and Personnel Management systems, including skills inventory, manpower scheduling, counseling, and reporting systems for EEO, HMO, and ERISA.
 - On-line dental insurance claims adjusting system using batch and on-line modes for processing eligibility, group benefits, patient history, and accounts payable. Acquired with Deltanet, this is available as a service through Deltanet in San Francisco.
 - Medical insurance administration system.
 - Flexible premium fixed annuity and a variable annuity software package.

APPLICATIONS The majority of Tesseract revenues are derived from applications oriented services. The majority of its applications software products are for specialty services although some have general business applications.

INDUSTRY MARKETS The insurance industry provides approximately 75% of the company's total revenues. The banking industry accounts for the other 25%.

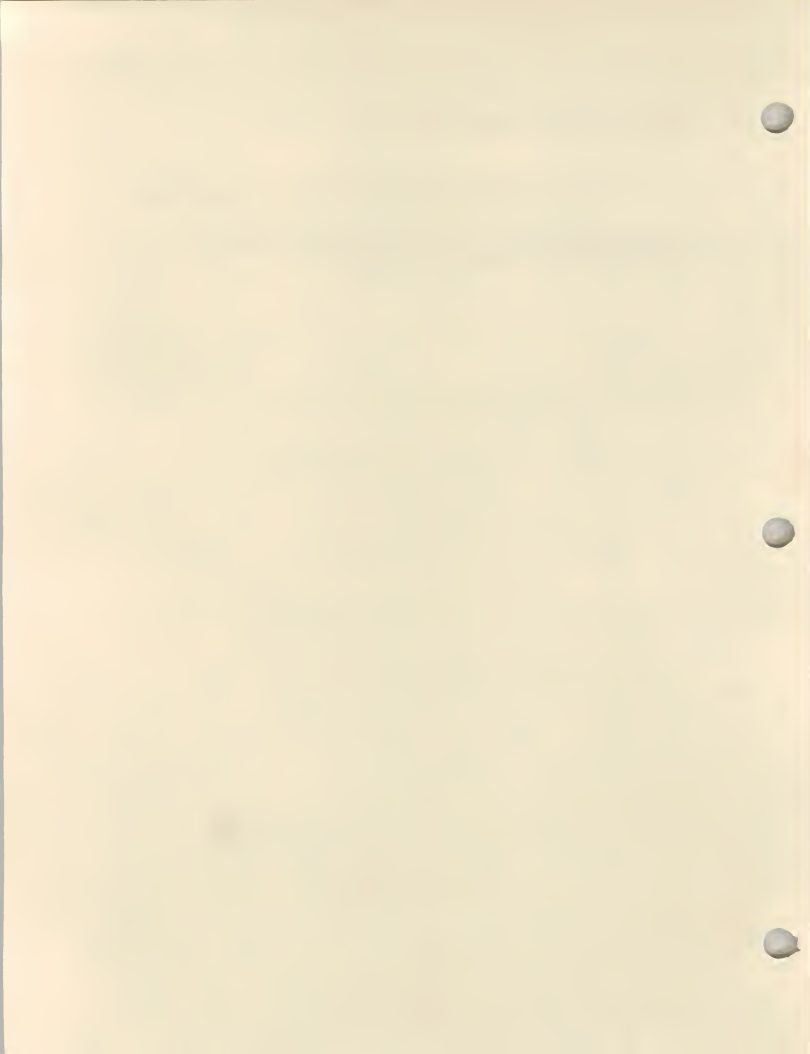
GEOGRAPHIC MARKETS

- Tesseract software packages are installed throughout the U.S. DAS has also been installed in England, Holland, and Canada. In 1977, international sales represented less than 1% of total Tesseract revenues.

COMPANY HIGHLIGHT/TESSERACT CORPORATION

- Professional services clients are centered in the Pacific states.

COMPUTER HARDWARE AND SOFTWARE Tesseract utilizes remote computer equipment in providing its products and services.



COMPANY BRIEF

Primary Industry-Specific Market: Manufacturing

Thomas-Laguban & Associates

250 North Patrick Boulevard
Brookfield Lakes Corporate Center
Brookfield, WI 53005
(414) 792-0300

CEO: Gene Thomas, Chairman
Private Company
Founded: 1969

Employees: 110 (5/86)
Revenue (FYE 12/31/85): \$4-6 million

The Company: Provides application software for manufacturing and distribution markets

Source of Revenue:

- Application Software (100%)

Key Products:

- Application Software (Utilizes IBM 43XX, IBM 30XX and compatible mainframes)
 - Master Scheduling
 - Accounts Receivable
 - MRP II
 - Accounts Payable

Target Industries:

- Metal cutting
- Electrical manufacturers
- Chemicals
- Defense/aerospace
- Textile/apparel

Geographic Markets:

- U.S. and Non-U.S.
- Sales Office: Milwaukee (WI)
- All sales are direct to end users; company does not use distributors

Other:

- TLA will be writing software for Programmable Logic Controllers (PLCs)

October 1986



COMPANY BRIEF

Cross Industry: Human Resources

Thomas L. Jacobs and Associates

230 W. Monroe Street
Suite 545
Chicago, IL 60606
(312) 346-0155

CEO: Richard A. Lewis, President
Private Company
Founded: 1915

Employees: 40

Revenue (FYE 12/31/85): \$2-3 million*

The Company: Thomas L. Jacobs and Associates provides disability benefit administration and automated benefit system design for insurers, major corporations, and federal, state, and local governments

Sources of Revenue:

- Professional Services (75%)
- Applications Software (25%)

Key Products and Services:

- T. L. Jacobs' only product--Jacobs Disability Management Systems (JDMS)--is an integrated information and support package designed to automate administration of disability and workmen's compensation benefits. It consists of software, consulting, and customization of JDMS software to the client's needs. All services are related to enhancement and implementation of the software package. JDMS software runs on DEC's VAX series of computers, the IBM PC/AT, and any system supporting CMS or TSO.

Geographic Markets:

- U.S. (98%)
- Canada (2%)
- Sales Offices: The company's Chicago headquarters office is its only office. Clients and sales are concentrated on the east coast and in the Midwest

*Company estimate

December 1986



① Revenue ERISCO
② Acquired by D+B

COMPANY HIGHLIGHT

THE THOMAS NATIONAL GROUP

1700 Broadway
New York, NY 10019
(212) 765-8500

Thomas Barrea, Chairman
Private Corporation
Total Employees: 250
Total Revenue, Fiscal Year End
2/28/83: \$11,500,000

THE COMPANY

- The Thomas National Group, founded in 1968, markets employee benefits and health claims software packages and processing services. General processing, keypunch, and photocomposition services are also available.
- Fiscal 1983 revenue was \$11.5 million, a 24% increase over \$9.3 million in 1982. A five-year revenue summary follows:

THE THOMAS NATIONAL GROUP
FIVE-YEAR REVENUE SUMMARY
(\$ thousands)

ITEM \ FISCAL YEAR	2/83	2/82	2/81	2/80	2/79
Revenue	\$11.5	\$9.3	\$8.2	\$6.8	\$5.7
Percent increase over previous year	24%	13%	21%	19%	12%

- Increased revenue in fiscal 1983 is primarily attributable to revenue derived from the company's Erisco, Inc. subsidiary.
- The company has been profitable since 1979.
- Management expects revenue to increase 30-35% in fiscal 1983 to \$14 or \$15 million.
- In Spring 1982 Thomas National Group announced a private placement of \$2.7 million. The financing involved the acquisition of a minority stock interest in Thomas National by Brentwood Associates (CA) and DSV Partners III (NJ), both institutional venture capital investors with pension fund clients. Financing will be used to expand benefits record keeping and health claims operations.
- The Thomas National Group is composed of three subsidiaries and two divisions, all located in New York City.

THE THOMAS NATIONAL GROUP

- Erisco, Inc. offers software products and processing services through two divisions:
 - The ImpleFacts Division, founded in 1972, offers a deferred benefits record-keeping system.
 - The ClaimFacts Division, founded in 1976, offers a health claims processing system.
- Thomas National, Inc., founded in 1968, provides processing and photo-composition services.
- Conversion Input Technology, Inc., formed in 1975, provides keypunching services.
- Major claims administration competitors include Woodward Ryan Sharp & Davis, Inc., MCAUTO, System Development Corporation, and Advanced System Applications, Inc. Competitors in the deferred benefits business area are primarily banks and consulting firms.

KEY PRODUCTS AND SERVICES

- Approximately 75% of fiscal 1983 revenue was derived from processing services and 25% from software package sales. Thomas National management is emphasizing growth in its processing services base as a major source of recurrent revenue.
- Thomas National, Inc. provides general processing services to approximately 55 clients. Services are available in interactive, remote batch, and batch modes. Revenue is also derived from photocomposition services and laser printing.
 - Thomas National, Inc. does not provide industry-specific processing. The Thomas Information Processing System (TIPS) data base maintenance package and utility software, including JDS, VTAM, MCP, CICS, and WYLBUR, are available.
 - Thomas National, Inc. provides the data center for processing products available from the Erisco, Inc. subsidiary.
- Erisco, Inc. markets two proprietary products, ImpleFacts and ClaimFacts. The products are available as software packages or as processing services applications.
 - ImpleFacts, developed in 1972, is a package that facilitates record keeping for deferred employee benefits including thrift/savings, profit sharing, TRASOP, stock bonus plans, and ESOP. The product is marketed to corporations, banks, insurance carriers, and consultants. Batch and remote batch versions are available. An on-line version of the package was introduced in January 1983. Conversion of batch customers to the interactive mode is expected to take about a year.

- There are approximately 18 installations of the package, which costs from \$125,000 to \$175,000 depending on customization. ImpleFacts is written in COBOL and runs on IBM 4341 Group 2 and larger or compatible equipment under OS/MVS and DOS/VSE.
 - Approximately 400 service clients use ImpleFacts through the Thomas National, Inc. data center.
 - ImpleFacts generated \$5 million in processing services and software product revenue in fiscal 1983.
 - Clients include K Mart, Chemical Bank, Texas Instruments, Montgomery Ward, U.S. Bancorp, Dow Jones & Company, Dun & Bradstreet, Federal Reserve Bank, and Xerox Corporation.
 - Recent enhancements to ImpleFacts include flexible IRA record-keeping and reporting capabilities for IRA contributions and rollovers. The system has also been expanded to incorporate the Section 401(K) Salary Reductions deferral arrangement and TEFRA legislation.
- ClaimFacts, an on-line package for claims processing, was developed by Erisco from 1976 to 1979 and introduced in 1980. The product is marketed to insurance companies, self-insured corporations, third-party administrators, Blue Cross/Blue Shield organizations, and Taft-Hartley Funds. ClaimFacts generated approximately \$4 million in processing and software product revenue in fiscal 1983.
- The product can be configured to include Medical, Dental, and Disability modules.
 - Features include claims processing for basic and major medical, dental, optical, prescription drugs, survivor benefits, and disability insurance.
 - The system permits on-line change of benefit calculations, group insurance regulations, and plan definitions. Capabilities for employee benefit calculations on a group or individual basis are also provided.
 - The ClaimFacts Dental module, introduced in 1982, features on-line tooth chart inquiry, files for dental procedures and categories, dental history, utilization, and provider profiling capabilities.
 - The Short- and Long-Term Disability module, introduced in early 1983, handles all new FICA requirements, with federal and state withholding capabilities, Social Security and Worker's Compensation offsets, automatic repetitive payments, and recertification.

THE THOMAS NATIONAL GROUP

- There are currently 26 installations of the package, which sells for \$300,000 to \$350,000 including training and customization. The product is also available on a lease basis. ClaimFacts is written in COBOL and ASSEMBLY languages and runs on IBM 4341 Group 2 and larger or compatible mainframes under OS/MVS and DOS/VSE. A version of ClaimFacts running on the HP 3000 is also available.
- ClaimFacts is used on an interactive basis by over 50 clients. Processing clients access the product via the Thomas National, Inc. network.
- Clients include Cannon Mills, Bristol-Myers/Mead Johnson, Joseph E. Seagram & Sons, Charter Medical Services, Amalgamated Life Insurance, Bradford National Life Insurance, Blue Cross and Blue Shield of Maine, American Baptist Church, Boilermaker's National Health and Welfare Fund, and third-party administrators including MICA, Incorporated; Navy League Administrators; General Adjustment Bureau; and Plan Services, Inc.

INDUSTRY MARKETS

- The Thomas National Group's fiscal 1983 revenue was generated from clients in a variety of industry sectors including banking and finance, insurance, manufacturing, retail, and services.

GEOGRAPHIC MARKETS

- Fiscal 1983 revenue was derived from clients across the U.S.

COMPUTER HARDWARE AND SOFTWARE

- One data center is operated for The Thomas National Group by Thomas National, Inc. Equipment consists of two IBM 4341 Group 2 mainframes running under OS/MVS. Access is via dial-up or leased lines.

COMPANY HIGHLIGHT

THE THOMAS NATIONAL GROUP

1700 Broadway
New York, NY 10019
(212) 765-8500

Thomas Barrea, Chairman of the
Board
Private Corporation
Total Employees: 250
Total Revenue, Fiscal Year End
2/28/81: \$8,200,000

PRINCIPAL BUSINESS

- Thomas National Group specializes in employee benefits software packages and processing services.
 - The Group consists of three subsidiaries, each responsible for a specific service. The subsidiaries are:
 - Thomas National, Inc., founded in 1968, provides general processing services.
 - Conversion Input Technology, Inc. (CIT), founded in 1975, provides keypunching services.
 - Erisco, Inc., founded in 1976, offers services through two divisions:
 - ImpleFacts offers a deferred benefit recordkeeping system.
 - ClaimFacts offers a health claims processing system.
 - In 1979 The Thomas National Group sold a fourth subsidiary, Trust Fund Consultants, Inc., who administered trust funds.

FINANCIALS (\$ millions)

	2/81	2/80	2/79	2/78	2/77
- Total revenue	\$ 8.2	\$ 6.8	\$ 5.7	\$ 5.1	\$ 3.3
- Percent increase	21%	19%	12%	55%	N/A

- Thomas National Group management expects total revenue to increase approximately 22% in FY 1982 to \$10 million.

SOURCES OF REVENUE

- 53% Processing services.
- 47% Software products.

THE THOMAS NATIONAL GROUP

PRODUCTS AND SERVICES

- Thomas National, Inc., the first subsidiary of the Thomas National Group, provides general processing services. Approximately 67% of its revenue comes from utility, interactive, batch, and remote batch services to approximately 55 clients. The remaining 33% of revenue is derived from photocomposition services and laser printing.
 - Thomas National, Inc., does not offer industry-specific applications processing. Utility software available includes JDS, VTAM, MCP, CICS and WYLBUR.
 - Thomas National, Inc. provides the data center for processing products available from the Erisco, Inc., subsidiary.
- Erisco, Inc., markets ImpleFacts, a software package which facilitates record-keeping for deferred employee benefits, including thrift/savings, profit sharing, TRASOP, stock bonus plans, and ESOP.
 - There are approximately 15 installations of ImpleFacts which costs from \$85,000 to \$135,000 depending on customization. ImpleFacts is written in COBOL for IBM 370/138 and larger equipment.
 - Approximately 400 service clients use ImpleFacts on a batch or remote batch basis through the Thomas National, Inc., data center.
 - Thomas National Group management expects ImpleFacts' combined software product and processing service sales to generate \$3.8 million in revenue in FY 1982.
- Erisco also offers ClaimFacts, a software package for medical and dental claims processing, introduced in 1980. ClaimFacts generated about \$700,000 in FY 1981 revenue. Management anticipates it will contribute \$1.6 million in FY 1982.
 - There are currently six installations of the package which sells for \$275,000. It is written in COBOL and ASSEMBLY languages for IBM 370/148 and larger mainframes.
 - ClaimFacts is used on an interactive basis by 10 clients. Processing clients access the product via the Thomas National network.
- CIT has provided keypunching services since 1975 and is expected to have \$1.6 million in FY 1982 revenue.

INDUSTRY MARKETS

- The banking and finance industry generated most revenue in fiscal 1981 as shown below:

THE THOMAS NATIONAL GROUP

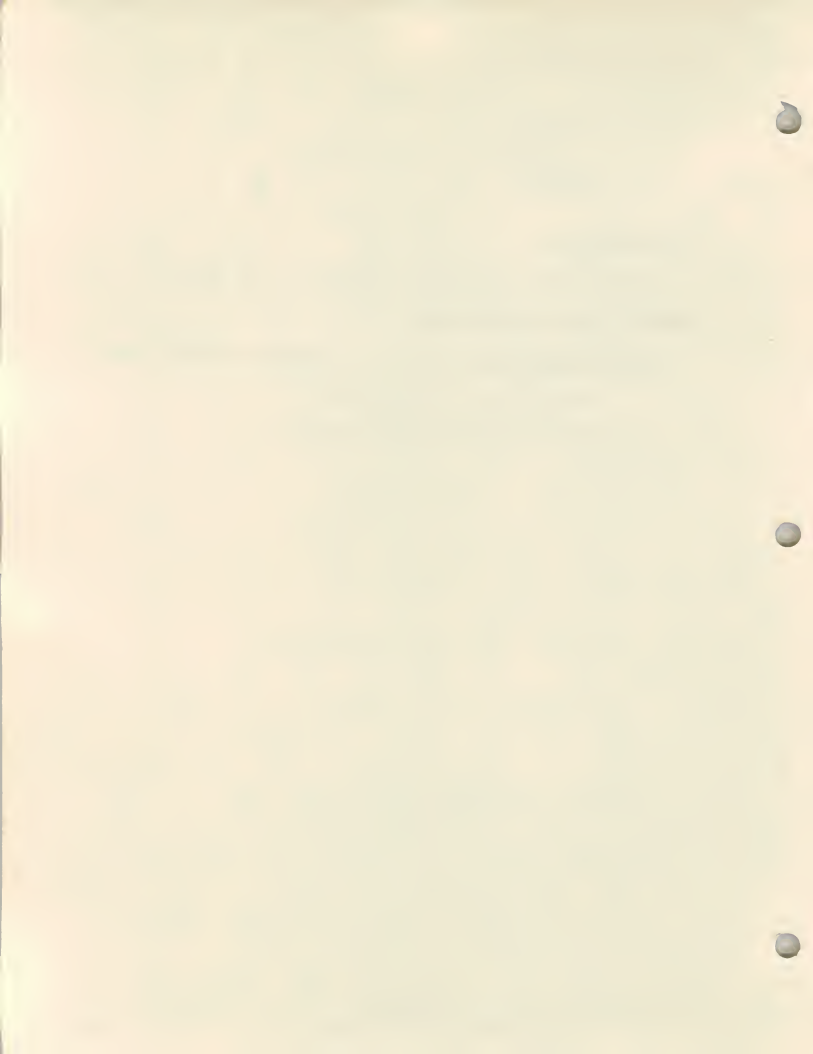
•	Banking/finance		60%
-	Thrift	40	
-	Brokerage	20	
•	Insurance		10
•	Other industries		<u>30</u>
			100%

GEOGRAPHIC MARKETS

- Thomas National Group markets its products and services exclusively in the U.S. Most clients are in the Northeast region.

COMPUTER HARDWARE AND SOFTWARE

- One data center is operated for the Thomas National Group by Thomas National, Inc. Equipment consists of:
 - 1 IBM 370/158 running under OS/MVS.
- The Group uses leased lines for accessing its computer.



COMPANY HIGHLIGHT

THE THOMAS NATIONAL GROUP, INC.

1775 Broadway
New York, New York 10019
(212) 765-8500

Pat D'Amato, President
Private

Total employees: 185

Total revenues, fiscal year end
2/28/78: \$6,340,000

Computer Services revenues:
5,800,000

est.
1.980 8.6
1981 9.6

THE COMPANY

- The Thomas National Group was founded in 1968 to provide general business processing services. In 1972, it began to specialize in the banking/finance and insurance industries. It now offers general business processing and specialized software products to its more than 300 users.
- The Thomas National Group has five subsidiaries. Each is responsible for a specific service, as shown below:
 - Thomas National, Inc., founded in 1968.
 - Implefacts, Inc., founded in 1971.
 - Conversion Input Technology, Inc. (CIT), founded in 1975.
 - Trust Fund Consultants, Inc. (TFC), founded in 1976.
 - Erisco, Inc., founded in 1976.
- Total revenues increased approximately 37% between fiscal 1977 and fiscal 1978 from \$4.6 million to \$6.3 million. Computer services revenues during the same period increased 41% from \$4.1 million to \$5.8 million.
 - Approximately 25% of fiscal 1977 growth came from the acquisition of TFC in March 1977.
 - Management expects revenue increases in fiscal 1978 to result from the expansion of pension retirement systems, Erisco, and TFC services.
- Major competition for remote computing and batch services comes from local New York companies.
- The staff consists of:

-	Computer Services	50
-	Marketing	12
-	Technical Support	10(variable)
-	Operations	98
	Computer	38
	Key Entry	60
-	General and Administrative	<u>15</u>
		185

May 1978

COMPANY HIGHLIGHT/THE THOMAS NATIONAL GROUP, INC.

KEY PRODUCTS AND SERVICES

- Total revenues were generated by the following services (all percentages are approximate).

<u>Service</u>		<u>% of Revenues 1977</u>
Remote Computing		30%
- Remote Batch	15	
- Data Base Inquiry	15	
Batch		10
Facilities Management (remote)		10
Applications Software Products		<u>50</u>
		100%

- Specific services provided through the subsidiaries are as follows:
 - Thomas National, generating approximately 50% of revenues, originally provided raw computer time, computer applications expertise, and data entry services. It now offers primarily general business processing services for standard accounting applications including accounts payable, accounts receivable, inventory control, and general ledger. Scientific and engineering services are also available. In addition, this group functions as the executive and administrative arm of the company and provides computer processing services to the other subsidiaries which all offer more specialized services.
 - Implefacts, generating approximately 25% of total revenues, provides recordkeeping services for employee benefit plans such as stock and thrift savings plans.
 - CIT, generating approximately 10% of revenues, provides keypunching services.
 - TFC, which contributed approximately 15% of total revenues in fiscal 1978, administers trust funds.
 - Erisco, generating approximately 5% of annual revenues, offers services similar to those of Implefacts. It administers qualified Individual Retirement Accounts and Keogh accounts.

APPLICATIONS Approximately 90% of Thomas National Group revenues are derived from general business services. The remaining 10% of revenues are from utility services.

COMPANY HIGHLIGHT/THE THOMAS NATIONAL GROUP, INC.

INDUSTRY MARKETS The banking and finance industry generated the majority of revenues in fiscal 1978 as shown below:

Banking/Finance		60%
- Thrift	40	
- Brokerage	20	
Insurance		10
All industries (general service)		<u>30</u>
		100%

GEOGRAPHIC MARKETS Most of the company's more than 300 clients are located in the northeast region of the United States. Branch offices are located in Boston, New York, and Washington, D.C. The San Francisco branch office, closed in June 1977, is scheduled to be replaced by an office in Los Angeles during 1978.

COMPUTER HARDWARE AND SOFTWARE

- The Thomas Natinal, Inc. Computer Center in New York has the following equipment:
 - Host computer: 1 - IBM 370/158 running under MVS.
 - Front ends: 1 - IBM 370X for IMS and TSO.
1 - Memorex 1380 for RJE and Wylbur.
2 - HP 3000 minicomputers for data base inquiries to subsidiaries.
 - Terminals: approximately 40 CRTs
32 teleprinters
Half the terminals are at client sites and half at the New York computer center.
- The TFC Computer Center in Washington, D.C. has an additional Hewlett Packard HP 3000 minicomputer.
- The software includes IMS, JDS, VTAM, MCP, TSO, and WYLBUR.
- The network is composed of both dial-up and leased lines.



Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

March 1995

Thomson Financial Services

President: Mason Slaine
CFO: Fred H. Edling
22 Pittsburgh Street
Boston MA 02210
Phone: (617) 345-2000
Fax: (617) 737-3165

Status:	Division
Parent:	The Thomson Corporation
Employees:	3,000 (12/94)
Revenue:	\$ 450,000,000*
Fiscal Year End:	12/31/94
*INPUT Estimate	

Key Points

- Thomson Financial Services (TFS) provides financial software, information, research and analysis to financial and corporate communities worldwide.
- To date, TFS has an installed base of over 45,000 customers in more than 65 countries.
- In 1994, Mason Slaine took over from Andrew Mills, as the president of TFS.

Company Description

Thomson Financial Services, a business division of the Thomson Financial and Professional Publishing Group (TFPPG) within the Thomson Corporation, provides on-line financial information, research, analysis and systems software products to the business and financial markets worldwide.

Headquartered in Toronto (Canada), The Thomson Corporation is a \$6 billion company that publishes newspapers and business-to-business information. The Thomson Corporation is comprised of four main groups

- Thomson Financial and Professional Publishing Group (TFPPG)

- Thomson Corporation Publishing International (TCPI)
- Thomson Newspapers (TN)
- Thomson Travel (TT)

Organization and Structure

Headquartered in Boston (MA), TFS has over 35 offices worldwide, and serves over 45,000 clients in over 65 countries. TFS has office locations in several parts of the U.S. and international offices in Canada, Europe, and the Pacific Rim.

TFS is comprised of more than 30 self-contained businesses. Principal companies and products include:

- Alert
- American Banker/The Bond Buyer
- Asset Backed Securities Group
- AutEx
- CDA Investment Technologies
- First Call Corp.
- ILX Systems
- International Financing Review
- The Investext Group
- Muller Data Corp.
- Municipal Market Data
- Thomson Municipal Services
- OASYS
- Thomson Investment Software
- Securities Data Publishing
- Securities Data Company
- Securities Information Center
- Sheshunoff Information Services
- Technical Data
- Thomson Bankwatch
- Thomson Financial Publishing
- Valorinform

Company Strategy

TFS' strategy is to sustain its growth through new business initiatives, staff training and high level of customer service.

On the international front, the company intends to increase its presence by having its regional managing directors in Europe and Asia developing non-U.S. businesses, providing custom products and services catered to their local markets.

Financials

INPUT estimates TFS' revenue was approximately \$450 million in 1994, compared to \$407 million in 1993 and \$336 million in 1992.

Market Financials

TFS markets its software products and services mainly to the finance and investment industries.

Employees

As of December 31, 1994, TFS had approximately 3,000 employees.

Key Products and Services

TFS develops banking software and provides on-line financial database services to the business and financial markets.

The company's product/service offerings are summarized below:

Equities/Mutual Funds

- AutEx—An electronic database and on-line real-time network for trade order indications used by the investment industry

- BlockDATA—A service that provides customized reports on block trading activity for AutEx

- CDA Investment Technologies—Provides institutional ownership data, portfolio performance data and mutual fund risk and performance characteristics. Products lines include:

- CDA/Bullseye
 - CDA/InvestNet
 - CDA/Spectrum
 - CDA/Wiesenberger

- First Call—The First Call Group is a joint venture of several U.S. securities firms. It is a financial research network that provides real-time analyst morning notes, intraday research broadcasts, and real-time earnings estimates from the world's top brokers. Related products/services include:

- First Call RTEE (Real Time Earnings Estimates)
 - First Call Research Direct
 - First Call Notes

- ILX Workstations—Provide a single integrated source for financial information needs. It links to First Call, AutEx and CDA/Spectrum

- TradeView—Trade order tracking system

- TradeRoute—Trade order routing system
- Private Research Services—A service targeted toward brokers, enabling them to customize a private on-line delivery system for their clients

Fixed Income And Currency

- The Bond Buyer—A daily newspaper and database for the municipal bond industry. It includes:

- The Bond Buyer's Bidcomp
 - The Bond Buyer's Munifile
 - The Bond Buyer's MuniView
 - The Bond Buyer's Munistatements
 - The Bond Buyer's Worksheets
 - The Bond Buyer On-Line

- BondCall—A real-time fixed income research source
- BondText—An on-line full-text database containing research reports on corporate, government and municipal debt
- International Financing Review (IFR) Publishing—Provides weekly global capital markets transaction news. It includes:

- Corporate Eye
 - IFR Database Information Services
 - International Financing Review
 - IFR Japanese Edition
 - Japan Watch
 - Vigil

- **Muller Data**—Provides end-of-day pricing on domestic and international equity, fixed income and treasury securities. It includes:
 - **Munifacts**—Provides real-time market news, offerings, syndicate messages, broker quotes and related data
 - Other offerings include—Munifacts Plus, Munifacts Disclosure Service and Munifacts Offering Service
- **Municipal Market Data**—On-line service that provides technical and fundamental analysis of municipal bond cash and futures markets. It comprises of:
 - **Municipal Strategies, Inc.**
 - **Variable Rate Demand Note Network**
- **Technical Data**—Delivers real-time fixed income and foreign exchange analysis to market professionals worldwide over the Telerate network
- **Thomson Research**—Provides research and analysis on trading strategies by telefax. It includes MMD Viewpoint

Structured Securities

- **Asset Backed Securities**—Provides disclosure data and analytics on structured securities. Offerings include:
 - **Almont Analytical MBS Analysis System**
 - **POOL**
 - **Trepp Pricing Services**
 - **Trepp Security Master Services**

Portfolio Management

- **Investment Software Division**—Offers tools for portfolio reporting, trading and investment analysis. Its offerings include:
 - **PORTIA**—A real-time, multi-user investment management tool for portfolio reporting, trading, accounting, operations and investment analysis
 - **CADENCE**—A tool that provides comparative statistical data to bank trust departments, pension consultants, investment managers and fund sponsors
 - **PARAGON**—A tool for trading and investment analysis

Securities Settlement

- **ALERT**—A standard for electronic trade settlement
- **OASYS**—Electronic network for sending and accepting trade details. Family of products include—OASYS U.S.; OASYS U.S. Fixed-Income; and OASYS Global
- **INSTANT LINK**—An electronic global trade confirmation and settlement system
- **Securities Information Center (SIC)**—Operator of the lost and stolen securities program for the Securities and Exchange Commission (SEC)
- **Valorinform**—Database that provides information on equities, income and capital change
- **Thomson TRADELINX**—An electronic trade communication network

Corporate Finance/Information

- **First Call Corporate Release**—A two-way source for communication between corporations and Wall Street
- **Investext**—Database offering intelligence on companies, products, industries and regions of the world. The Investext group offers:
 - Pipeline
 - BondText
 - I/PLUS Direct
 - MarkIntel Master
 - Research Bank-Global Edition
 - MarkIntel
- **Securities Data Company (SDC)**—Database containing information on domestic and international merger and acquisition activity
- **Securities Data Publishing**—Offers magazines, journals, newsletters and directories
- **IFR/Securities Data Information Services**—Databases containing primary market data on all cross-border transactions in the debt, credit, loan and international equity markets. Databases include IFR Bondbase, Notebase, Equibase and Bidbase
- **Venture Economics Data**—Provides details on the venture capital business. Databases include:
 - Strategic Alliance Database
 - Venture Intelligence Database
 - Venture Capital Performance Indicator Database

- **Venture Economics Publishing**—Database of venture-backed firms and alliances. Publications include Venture Capital Journal, Pratts Guide to Venture Capital Sources, European Venture Capital Journal and UK Venture Capital Journal

Banking

- **American Banker**—A daily national publication that tracks banking and financial services
- **Sheshunoff Information Services**—Provides financial data, analysis and ratings on all federally insured banks, S&Ls, savings banks and bank holdings companies. Related products include:
 - Sheshunoff Financial Performance Review
 - Sheshunoff Regulatory Compliance
 - Sheshunoff Regulatory Reporting Software
- **Thomson BankWatch**—Provides ratings on financial institutions such as U.S. banks and thrifts, international banks, securities firms and insurance companies
- **Thomson Financial Publishing**—Provides information on transfer of funds and research/business development

Clients

TFS serves customers in the banking and investment markets worldwide.

Marketing and Sales

In the U.S., the company has branch offices in Altamonte (FL); Atlanta (GA); Austin (TX); Boston (MA); Chicago (IL); Cincinnati (OH); Englewood (CO); Ft. Lauderdale (FL); Farmington (CT); Hoboken (NJ); Los Angeles (CA); Newark (NJ); New York (NY); Pasadena; Rockville (MD); San Francisco

(CA); Seattle (WA); Skokie (IL); Stamford (CT) and Washington (D.C.).

TFS has international offices in Toronto (Canada); London, Paris, Berne, Geneva, Frankfurt and Budapest (Europe); and Hong Kong, Sydney, Kamakura, Tokyo and Singapore (Pacific Rim). Through its offices overseas, TFS creates and distributes its products globally.

Competition

Some significant competitors by product include:

- First Call—Multex Systems, Inc.
- Trading networks—Davigde Data Systems, Merrin Financial Inc.
- Thomson Investment Software—Sungard, Advent Software.

Parent Company

The Thomson Corporation
Suite 2706,
Toronto Dominion Bank Tower,
PO Box 24, Toronto-Dominion Centre
Toronto, Ontario M5K 1A1
Phone Number: (416) 360-8700
Fax Number: (416) 360-8812

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

June 1995

Thomson Professional Publishing

President & CEO: George Wallace
Metro Center
One Station Place
Stamford, CT 06902
Phone: (203) 969-8700

Status:	Operating Group
Parent:	The Thomson Corporation
Employees:	4,800 (5/95)*
Revenue:	\$ 631,000,000
Fiscal Year End:	12/31/94
* INPUT Estimate	

Key Points

- Thomson Professional Publishing (TPP) provides print and database products for U.S. and Canadian legal, tax, accounting, human resources and regulatory markets.
- In early 1995, TPP's parent company—The Thomson Corporation—acquired Barclays Law Publishers. The acquired company now operates as a business within TPP.
- TPP has rapidly expanded its electronic product line offerings through the introduction of seven new CD-ROM titles by

Clark Boardman Callaghan—a TPP company.

Company Description

TPP is a provider of primary, analytical and business information to professionals in the legal, tax, accounting, human resources and regulatory markets. TPP's offerings are available in both print and electronic formats.

TPP is an operating unit of The Thomson Corporation, a \$6.4 billion company based in Toronto, Ontario that publishes newspapers and business-to-business information.

In May 1994, in order to optimize its development and growth potential The Thomson Corporation reorganized its information and publishing organization to form two groups—Thomson Financial & Professional Publishing Group (TFPPG) and

Thomson Corporation Publishing International (TCPI).

TFPPG, as a whole, provides about 3,300 individual products, including 170 on-line services, 180 CD-ROM products, about 40 software packages, 440 loose-leaf services, 175 newsletters and approximately 2,000 books and directories.

Organization and Structure

TPP is one of two business groups within the TFPPG, which in turn is an operating group within Thomson Information Publishing Group (TIPG).

The Thomson Corporation's organization structure is shown in Exhibit A on the following page.

Headquartered in Stamford (CT), TPP has offices in San Francisco (CA), Ontario (Canada), Webster and New York (NY), Deerfield (IL), Rochester (NY), Kent (OH), Fortworth (TX), Stamford (CT) and Boston (MA).

TPP is comprised of the following entities:

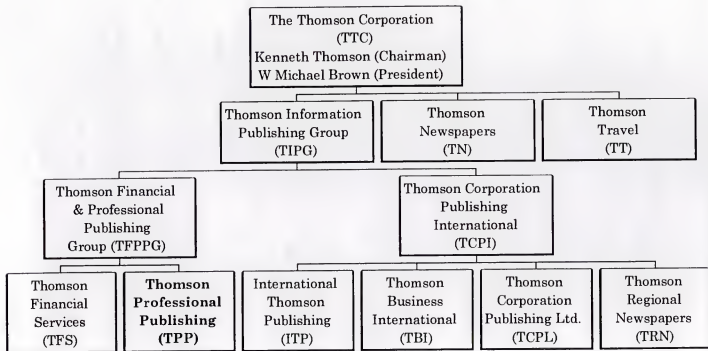
- Bancroft-Whitney
- Barclays Law Publishers
- Carswell
- Clark Boardman Callaghan
- Faulkner & Gray
- Lawyers Cooperative Publishing
- Practitioners Publishing Company
- Research Institute of America
- TPP-Manufacturing
- Warren Gorham & Lamont

Company Strategy

TPP's strategy is to sustain its growth through accelerating development of new products, leveraging individual companies' resources, integrating new technologies, implementing tighter cost controls and continuing its commitment to working closely with customers.

In an effort to exploit the growing opportunity in the electronic products market, TPP is accelerating the migration of its product offerings to the CD-ROM format. TPP anticipates that 1995 revenue from new sales of its electronics products will exceed that of new print sales.

Exhibit A
The Thomson Corporation
Organization Chart



Financials

TPP's 1994 revenue was \$631 million, an 8% increase over 1993 revenue of \$585 million.

Operating profit in 1994 reached \$93 million, a 13% increase over \$82 million in 1993.

A three-year financial summary follows.

Thomson Professional Publishing Three-Year Financial Summary (\$ Millions, except per share data)

Item	Fiscal Year		
	12/94	12/93	12/92
Revenue	\$631	\$585	\$556*
• Percent change from previous year	8%	5%	N/A
Operating income	\$93	\$82	\$78*
• Percent change from previous year	13%	5%	N/A

* INPUT Estimate

The company attributes increase in revenue in 1994, largely to the launch of new legal and tax products in the CD-ROM format:

- Seven new CD-ROM product launches by Clark Boardman Callaghan, including *Nichols Electronic Legal Forms* and *Employment PowerLink*.
- New state product launches by Lawyers Cooperative Publishing, in Connecticut, Illinois, Louisiana, Massachusetts, New York and Texas.
- New state tax products introduced by Research Institute of America.
- Increase in renewal business for Warren Gorham & Lamont
- Introduction of several new publications by Practitioners Publishing Company, including *Estate Planning*, *Nonprofit Financial Statements* and its first CD-ROM title—*1040 Deskbook Plus*.

- Growth in subscriptions to publications—*Credit Card Management*, *Accounting Today*, *US Banker* and *Bank Technology News* from Faulkner & Gray.

TPP anticipates that for the first time, in 1995, new sales of electronic products will exceed its new print sales.

Market Financials

TPP markets its products and services mainly to the professional, business, financial services and legal industries, among others.

Geographic Markets

Virtually 100% of TPP's revenue is derived from North America.

Acquisitions

In early 1995, TTC acquired Barclays Law Publishers, a company known for publishing the *Official California Code of Regulations* and official administrative codes for Illinois and North Carolina.

Employees

As of May 1995, INPUT estimates that TPP had approximately 4,800 employees. TFPPG had a total of approximately 8,000 employees.

Key Products and Services

Major imprints and companies within TPP include:

- Bancroft-Whitney—A leading publisher of primary and secondary information in the state of California with publications such as *Deering's Codes*, *Official California Reports* and *Within* series of treatises. Recent practice-oriented offerings include *California Civil Practice* and *LawDesk®*.
- Barclays Law Publishers—Acquired in 1995, with well-known publications including the *Official California Code of Regulations* and official administrative codes for Illinois and North Carolina.
- Carswell—A legal publisher in Canada with offerings that include treatises, loose-leaf encyclopedias, law reports, newsletters and monographs.
 - A well-known title is the *Canadian Abridgement*.
 - Carswell is expanding its information services in the legal and accounting areas through new on-line research services.
- Clark Boardman Callaghan (CBC)—Publisher of highly-specialized treatises, handbooks and newsletters in legal fields including securities, corporate and commercial law.
 - CBC also specializes in bankruptcy, environmental, intellectual property and tort/personal injury.
- Some published titles include *Securities and Federal Corporate Law*, *Fletcher Cyclopedia of Corporations and Hawland Uniform Commercial Code* series.
- Faulkner & Gray—A large publisher of banking magazines, with publications including *Credit Card Management* and *Accounting Today*.
- Lawyers Cooperative Publishing (LCP)—Provider of analytic research information, with products such as *American Law Reports (ALR)*, *American Jurisprudences 2d* and *United States Code Service (USCS)*. LCP is introducing new products in states such as Florida, Illinois, Massachusetts, Michigan, New York and Pennsylvania.
- Research Institute of America (RIA)—Provider of federal and state tax research and compliances in print and electronic formats. Products offered include *Federal Tax Coordinator*, *The U.S. Federal Tax Reporter*, *Federal Tax Guide* and *Tax Cimator*. RIA also provides a range of State Tax services.
- Warren Gorham & Lamont (WGL)—WGL along with its subsidiary—Practitioners Publishing Company, offers specialized newsletters, journals, magazines and supplemented books with major offerings on the tax, accounting and human resources fields. Practitioners Publishing Company introduced its first CD-ROM title—1040 Deskbook Plus—in 1994.
- TPP-Manufacturing

Marketing and Sales

TPP sells its products and services mainly in North America, through its sales staff located in offices in ten major cities.

Competition

TPP faces significant competition from Mead Data Central (LEXIS/NEXIS), West Publishing Company (WESTLAW), Dow Jones News Retrieval, Knight-Ridder Information Services, VU/TEXT and BRS.

INPUT Assessment

In spite of the continued competitive market pressures that persist in the tax and legal areas, TPP's sales in 1994 grew by 8%, due to several new product launches, particularly in the CD-ROM format. TTP has invested heavily in the development of CD-ROM products in recent years and will continue to develop its information databases.

Parent Company

The Thomson Corporation
Suite 2706
Toronto Dominion Bank Tower
PO Box 24, Toronto-Dominion Centre
Toronto, Ontario M5K 1A1
Revenues: \$6,354,000,000 (12/94)
Employees: 48,250 (12/94)

COMPANY PROFILE

THE MACNEAL-SCHWENDLER CORPORATION

815 Colorado Boulevard
Los Angeles, CA 90041
(213) 258-9111

Dr. Richard H. MacNeal, Chairman
Dr. Joseph F. Gloudeman, President and
CEO
Public Corporation, AMEX
Total Employees: 223
Total Revenue, Fiscal Year End
1/31/88: \$34,530,000

The Company

The MacNeal-Schwendler Corporation (MSC) develops, markets, and supports mechanical-computer-aided engineering (MCAE) software products used by engineers and designers in industry, research laboratories, and universities. The company's principal product, MSC/NASTRAN, has been adapted to run on supercomputers, mainframes, and minicomputers.

- MSC was incorporated in California in 1963 as an engineering professional services company. Beginning in 1966, MSC was a major contributor to the development of NASA's NASTRAN, a general purpose structural analysis computer program based on the finite element method.
- In 1971 MSC began offering its own proprietary enhanced version of NASTRAN under the name MSC/NASTRAN.
- MSC made an initial public offering of common stock in May 1983. The stock was traded on the over-the-counter market until 1984 when it began trading on the American Exchange.

MSC's fiscal 1988 revenue reached \$34.5 million, a 28% increase over fiscal 1987 revenue of \$27.1 million. Net income rose 29%, from \$7 million in fiscal 1987 to \$9.1 million in fiscal 1988. A five-year financial summary follows:

THE MACNEAL-SCHWENDLER CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	1/88	1/87	1/86	1/85	1/84
Revenue	\$34,530	\$27,078	\$21,101	\$15,334	\$11,801
• Percent increase from previous year	28%	28%	38%	30%	28%
Income before taxes	\$15,115	\$12,692	\$8,388	\$5,827	\$4,234
• Percent increase from previous year	19%	51%	44%	38%	33%
Net income	\$9,069	\$7,005	\$4,866	\$3,379	\$2,535
• Percent increase (decrease) from previous year	29%	44%	44%	33%	43%
Earnings per share (b)	\$0.74	\$0.58	\$0.40	\$0.27	\$0.23
• Percent increase (decrease) from previous year	28%	45%	48%	17%	35%

- (a) Includes losses, net of taxes, of approximately \$2.3 million, or \$0.19 per share, in fiscal 1986, and \$202,000, or \$0.02 per share, in fiscal 1985 resulting from the discontinued operations of Modular Data Systems, Inc.
- (b) Restated to reflect a 100% stock dividend to shareholders of record on March 12, 1987.

MSC management attributes the company's revenue growth in fiscal 1988 to increased use of MSC/NASTRAN. The increase was due primarily to an increase in the number of installations of MSC/NASTRAN and from a rise in the average amount of MSC/NASTRAN customer usage.

- Since MSC first offered MSC/NASTRAN it has followed a consistent policy of leasing rather than selling its software products. The standard lease agreement specifies minimum monthly payments and additional payments based on usage for large computers and royalties as a percentage of sales for service bureau/data center clients.
- New MSC/NASTRAN clients generally have a greater impact on revenues in years subsequent to the year of the installation, reflecting a full year's payment and increased usage above the amount covered by the minimum monthly payments.

- There was a total of 125 net new installations of MSC/NASTRAN in fiscal 1988, compared to 116 in fiscal 1987 and 115 in fiscal 1986.

Research and development expenditures were approximately \$5.4 million (16% of revenue) in fiscal 1988, \$4 million (15% of revenue) in fiscal 1987, and \$3 million (14% of revenue) in fiscal 1986. Capitalized software development costs (net) were approximately \$2.8 million in fiscal 1988 and \$2 million in fiscal 1987.

In December 1987, MSC acquired CAD COMP, Inc., a subsidiary of A.O. Smith Corporation, for \$950,000.

- CAD COMP provides engineering/consulting services and offers several software products in the field of electromagnetics analysis.
- The operations of CAD COMP are now part of MSC's Engineering/Electromagnetics Applications Department (EEAD), headquartered in Milwaukee (WI).

Revenue for the six months ending July 31, 1988 reached \$19.7 million, a 21% increase over \$16.3 million for the same period in 1987. Net income for the period rose 6%, from \$4.2 million to \$4.4 million. Over 70 new MSC/NASTRAN installations were completed during the first half of fiscal 1989.

As of January 31, 1988, MSC had 223 employees, segmented as follows:

Marketing	38
Technical	119
Administration	66
	223

The company currently has approximately 234 employees.

MSC's major competitor is Swanson Analysis Systems, Inc. of Houston, PA (ANSYS product).

Key Products and Services

Approximately 96% (\$33 million) of MSC's fiscal 1988 revenue was derived from leasing of MSC/NASTRAN and related software products. The remaining 4% (\$1.5 million) of revenue was derived from microcomputer software products and consulting services.

A five-year summary of MSC/NASTRAN installation activity follows:

MSC/NASTRAN INSTALLATIONS

ITEM	FISCAL YEAR				
	1/88	1/87	1/86	1/85	1/84
Number of installations at start of year	718	602	487	398	328
Net additions (a)	125	116	115	89	70
Number of installations at year end (b)	843	718	602	487	398

- (a) *New installations less cancellations due to termination or reassignment.*
- (b) *Does not include a total of 146 universities for fiscal 1988, 109 for fiscal 1987, 91 for fiscal 1986, 60 for fiscal 1985, and 41 for fiscal 1984.*

As of July 31, 1988 MSC/NASTRAN was installed on over 914 computers worldwide.

MSC/NASTRAN is based on finite element analysis and is used as a computer-aided engineering (CAE) tool to analyze structures and determine strength, safety, and performance characteristics. Additional types of structural analysis provided by the program include analyses of vibration characteristics, dynamic response, transient heat transfer, elastic stability, and aeroelastic response.

- MSC/NASTRAN is used in the aerospace industry to determine stress distribution in major aircraft parts. The same principles have been used in the design of jet, rocket, and other engines; automobiles and trucks; tires; ships; farm and heavy industrial equipment; nuclear containment vessels; helicopters; and spacecraft.
- MSC/NASTRAN runs on 24 hardware platforms, including a range of supercomputers, mainframes, and minicomputers manufactured by IBM, Control Data, Unisys, Floating Point Systems, DEC, Amdahl, Apollo, Convex Computer, Alliant Computer, Data General, Hewlett-Packard, National Advanced Systems, Prime, Fujitsu, Siemens, Hitachi, Sun Microsystems, and Cray Research.
- MSC has a policy of leasing rather than selling its main MSC/NASTRAN software products. The standard lease

agreement is for a minimum of one year and is thereafter cancellable after six months notice. It specifies monthly payments and additional payments based on usage for larger computers and royalties as a percent of sales for data center network customers.

- The monthly minimum payment for new agreements to use MSC/NASTRAN for U.S. industrial customers and government agencies is based on the size and speed of the computer and ranges from \$750 on minicomputers to \$3,000 on supercomputers.
- The royalty paid by data center network clients is currently equal to 30% of their billings to customers for MSC/NASTRAN usage.
- Fees charged to universities are substantially lower than those charged to other customers when MSC/NASTRAN is used exclusively for teaching accredited university courses and for university-funded research.

MSC also markets optional software modules for use with MSC/NASTRAN.

- MSGMESH is a batch preprocessor that generates finite element models and simplifies the generation of input data for MSC/NASTRAN.
- MSC/ACCESS is used by the engineer or designer to build a custom postprocessor to extract MSC/NASTRAN analysis data. The postprocessor can then request detailed information and receive analysis data for immediate interpretation of results.
- MSC/TRANS is a companion product to MSC/GRASP and MSC/ACCESS. It allows the transfer of MSC/NASTRAN data from one computer type to another.
- MSC/STI-VAMP is a vibration, acoustic, and modal processor for testing and analysis developed by Synergistic Technology Incorporated and jointly marketed with MSC. The product runs on DEC PDP, DEC VAX, Harris 800, HP 1000, and Gould SEL systems.

MSC has developed an interface between MSC/NASTRAN and CADAM, Inc.'s CADAM product. The interface permits the transfer of structural or mechanical geometries from CADAM to MSC/NASTRAN.

MSC's microcomputer-based software products for finite element analysis include the following:

- MSC/pal 2^R, for three-dimensional static and dynamic stress and vibration analysis, runs on IBM and compatible microcomputers. It is priced at \$2,295. An Apple Macintosh version of MSC/pal is priced at \$1,495.
- MSC/calTM, for heat transfer analysis, runs on IBM PC/XT, PC/AT and compatible microcomputers. It is priced at \$1,795.
- MSC/mod, a graphics program to create models for MSC/pal 2 and MSC/cal, is priced at \$495. MSC/mod also interfaces to various CAD programs such as Autodesk's AutoCAD.

In August 1988 MSC introduced new versions of its family of software products for electromagnetic analysis that were acquired in December 1987 with CAD COMP, Inc. The products run on hardware from Apollo, Convex, Cray, DEC, and Floating Point Systems. The programs also run on IBM and compatible microcomputers and will soon run on IBM mainframes.

- MSC/MAGNETIC, for two-dimensional analysis, runs on mainframes and workstations.
- MSC/MAGGIE, for two-dimensional analysis, runs on microcomputers.
- MSC/MAGNUM, for three-dimensional analysis, runs on mainframes and supercomputers.

MSC offers several educational tools designed to teach the entry-level user how to use MSC/NASTRAN in structural analysis.

- PRENASTRAN is an introductory interactive computer program available for IBM, DEC VAX, and Apollo Domain computers that is intended for the entry-level user or as a review aid for the infrequent user of MSC/NASTRAN.
- MSC also sells a computer laboratory manual that may be used in conjunction with PRENASTRAN or separately.
- The company also offers a series of 30 color videotaped lectures that are designed to train users in the capabilities of MSC/NASTRAN.

Industry Markets

Approximately 89% of MSC's fiscal 1988 revenue was derived from industrial/manufacturing companies involved in the aerospace, automotive, shipbuilding, industrial and office equipment, nuclear, petrochemical, optic, architectural, and engineering industries. Approximately 5% of fiscal 1988 revenue was derived from government agencies, 5% from data center network services vendors, and 1% from universities.

MSC has in recent years emphasized installation of its products on in-house computers of its customers as opposed to network services vendors' data center installations. Data center usage, however, continues to be an important source of revenue and a means of introducing new users to MSC/NASTRAN. Data centers also provide overflow capacity for customers.

- As of January 31, 1988 MSC/NASTRAN was installed at approximately 30 data centers, the same number as in January 1987.
- As a percent of total revenue, however, the contribution from data centers had decreased from 8% (\$2.2 million) in fiscal 1987 to 5% (\$1.7 million) in fiscal 1988.
- Control Data Corporation's CYBERNET and SIS data center networks offer MSC/NASTRAN in the U.S., Western Europe, Australia, and Latin America. Boeing Computer Services and McDonnell Douglas Information Systems Company also provide MSC/NASTRAN through their data centers in various parts of the world.
- In Japan, data centers using MSC/NASTRAN include Century Research Corporation and Mitsubishi Research Institute.
- The Eastern European marketplace is also served by SIA and SCICON in Great Britain, IABG in Germany, ECN in the Netherlands, and INTEMA in Italy.

Geographic Markets

Approximately 63% of MSC's fiscal 1988 revenue was derived from the U.S., 17% from export sales, and 20% from Western Europe.

A three-year summary of geographic source of revenue follows:

**THE MACNEAL-SCHWENDLER CORPORATION
THREE-YEAR GEOGRAPHIC SOURCE OF REVENUE SUMMARY
(\$ millions)**

SOURCE	FISCAL YEAR					
	1/88		1/87		1/86	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$21.9	63%	\$18.0	66%	\$14.6	69%
U.S. exports (a)	5.7	17%	5.1	19%	4.1	20%
Western Europe	6.9	20%	4.0	15%	2.4	11%
TOTAL	\$34.5	100%	\$27.1	100%	\$21.1	100%

(a) Consists primarily of revenue from Far East customers.

U.S. regional offices are located as follows:

Western Region: Los Angeles (CA)
 Southwest Region: Grapevine (TX)
 Midwest Region: Brookfield (WI)
 Eastern Region: Lake Ronkonkoma (NY)

Additional U.S. sales offices are located in Elk Grove (CA), Atlanta (GA), Livonia (MI), Bala-Cynwyd (PA), and Marlton (NJ). Engineering services offices are located in Livonia (MI) and Rockville (MD).

MSC's European operations are headquartered in Munich, with a branch office in London, and distributors in Paris, Madrid, Rome, Oslo, and Tel-Aviv.

MSC's Far East operations are headquartered in Tokyo, with an office in Hong Kong, and distributors in Taiwan, Singapore, and Korea.

**Computer
Hardware**

MSC has computers from various manufacturers installed at its Los Angeles headquarters for research and development and customer support.

COMPANY BRIEF

Cross Industry: Systems Software

3CI
155 W. Harvard
Fort Collins, CO 80525
(303) 223-2722

CEO: R. Mehta, President
Private Company
Founded: 1980

Employees: 35 (11/86)
Revenue (FYE 3/31/86): \$2 million*, (FYE 3/31/87): \$3.5-4 million*

The Company: 3CI develops and markets relational data base management systems

Sources of Revenue:

- Application and Systems Software (100%)

Key Products:

- Application Software Products (Utilizes NCR 9XXX (RN/COS), I-TOWER (RN/COS), and U-TOWER (UNIX) series computers)
 - Cargo, transportation system model
- System Software Products (Utilizes DEC VAX, Data General, and Perkin-Elmer computers)
 - InFoCen, relational data base management system and fourth generation language

Geographic Markets:

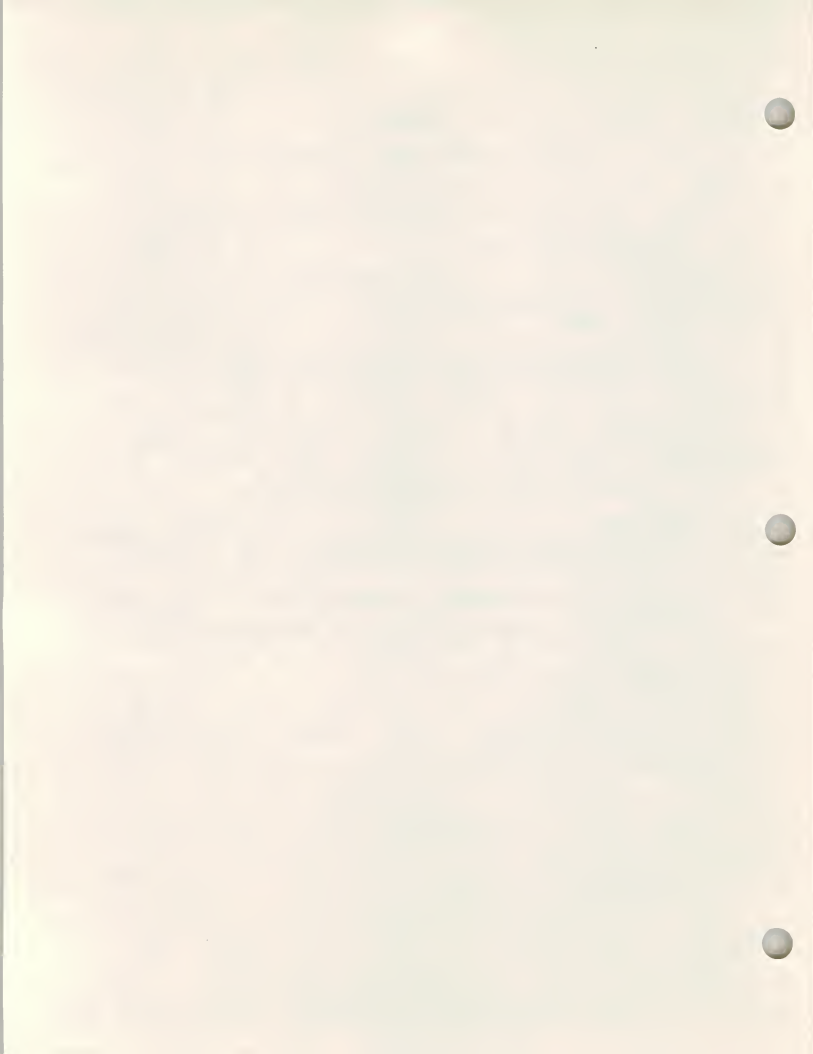
- U.S. (100%)

Significant Events:

- Currently porting InFoCen to CDC Cyber 170, 180, and 190 series computers and to the UNIX operating system

*Company estimate

October 1986



COMPANY PROFILE

TICKETRON

142 West 57th Street
New York, NY 10019-3301
(212) 887-1600

William Schmitt, President
Division of Control Data Corporation
Total Employees: 600*
Total Revenue, Fiscal Year End
12/31/88: \$129,300,000

*INPUT estimate

The Company

Ticketron provides on-line processing services to state lotteries (automated wagering services), operates off-track betting systems, and provides on-line sports and entertainment ticketing and reservation services.

- Ticketron operates as a division of Control Data Corporation (CDC) within CDC's Information Services Group.

Ticketron's 1988 revenue reached \$129.3 million, a 5% increase over 1987 revenue of \$122.8 million. A four-year revenue summary follows:

TICKETRON FOUR-YEAR REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR			
	1988	1987	1986	1985
Revenue	\$129.3	\$122.8	\$122.0	\$120.6
• Percent Increase (decrease) from previous year	5%	1%	1%	N/A

In September 1987, Ticketron's primary competitor began providing on-line services for a portion of the New York State Lottery. Prior to that time, Ticketron had been the sole provider of such services.

- In December 1987, Ticketron was awarded the contract to provide processing services for the Florida State Lottery. Revenues in 1988 from this contract roughly offset the 1988 decline in revenues from the New York lottery, but the contract did not contribute significantly to profits in 1988.

- Lower gross profits at Ticketron during 1988 were attributed principally to its decreased portion of New York lottery receipts, and costs and expenses associated with new lottery contracts and proposals.

While Ticketron's revenues were relatively unchanged from 1986 to 1987, its gross profits declined over that period.

- These results reflect, in part, a shift in the revenue mix, with a greater percent of revenue coming from sports and entertainment ticketing operations and a somewhat smaller percent coming from automated wagering operations.
- Profitability in 1987 was also affected by increased sales and marketing expenses in connection with contract proposals in the automated wagering business, and increased technical expenses attributed to the development of an advanced on-line lottery system.

Ticketron's competitors, by service, include the following:

- Ticketron claims to offer the only nationwide ticketing service, regional competitors include TicketMaster and Softex.
- Automated wagering services: GTECH Corporation.

Key Products and Services

INPUT estimates approximately 65% of Ticketron's 1988 revenue was derived from automated wagering services and 35% from automated ticketing services.

Ticketron's Automated Wagering service currently operates seven of the 28 state lotteries--involving 42% of all lottery revenue collected nationwide.

- Contracts for operating state lotteries generally range from three to five years, with extensions available to the client that can double the original contract length.
- Ticketron is the sole provider of on-line processing services to state lotteries in Delaware, Florida, Illinois, Maryland, Pennsylvania, and Washington. Ticketron also supplies processing services for part of the New York lottery's operations.
- In early 1989, Ticketron won five-year renewal contracts from Pennsylvania and Washington for their state lotteries.

Together, the contracts have a potential revenue value of \$165 million.

- In December 1987, Ticketron was awarded a five-year, two-month contract to provide services in connection with the new Florida State Lottery.
- In August 1989, Ticketron was awarded a five-year contract for services in connection with the Montana Lottery. Services will begin in November 1989.
- Ticketron is the only automated wagering supplier that designs and builds its own computer, communications, and terminal hardware, and that develops its own software.
- Lottery systems for Florida, Delaware, Pennsylvania, Washington, and Montana are based on CDC CYBER 930 series computers.
- Lottery systems for the other states are based on earlier generation CDC computers.
- Of the seven contracts Ticketron currently has for lottery services, CDC owns the computers for six and the seventh is owned by the customer (the state of Maryland). Ticketron is providing systems operations (facilities management) services for the state of Maryland's system.
- Ticketron operates the lottery systems for percent of lottery sales or a flat fee.
- Ticketron also operates two computerized off-track betting systems in upstate New York under separate five-year contracts.

Ticketron's Sports and Entertainment service provides on-line ticketing and reservation services in the U.S. and Canada through over 700 outlets.

- Consumers may purchase tickets for entertainment and sports events through remote and box office terminals and through Ticketron Phone Charge.
- Ticketron has contracts with sports and entertainment facilities and event promoters to sell tickets, as well as with the National Park Service and various state parks.

- Ticketing customers range from small facilities to very large venues and include Boston Garden, theaters, colleges, arenas, amphitheaters, and local clubs.
- Revenue from these services comes from service fees charged to ticket purchasers.

Industry Markets

Approximately two-thirds of Ticketron's revenue is derived from lottery systems operated for seven state governments. The remainder of revenue is derived from consumers that purchase sports and entertainment tickets.

Computer Hardware

Ticketron operates on-line lottery systems in Delaware, Florida, Illinois, Maryland, New York, Pennsylvania, and Washington. An on-line system will be installed for Montana in November 1989.

Ticketron operates the following data centers in support of its Sports and Entertainment ticketing services:

- Main data centers are located in New York City and Los Angeles.
- Regional data centers are located in Boston, Buffalo, Cincinnati, Cleveland, Dallas, Houston, Las Vegas, Los Angeles, Milwaukee, Montreal, New York City, Philadelphia, San Diego, San Francisco, Toronto, Virginia Beach, and Washington, D.C.

COMPANY HIGHLIGHT

Delayed 1/81

→ Frank Del Monte

TICKETMASTER CORPORATION

4350 E. Camelback, Suite 220E
Phoenix, AZ 85018
(602) 959-0710

Charles Hamby, President

Private corporation

Total employees: 20

Total revenues, fiscal year end
12/31/77: \$1,000,000*

THE COMPANY

- TICKETMASTER Corporation was founded in 1975 to provide turnkey ticket printing and sales management systems to the entertainment industry. It currently offers on-line ticket printing services in addition to the turnkey systems.
- Its competitors include Ticketron (a subsidiary of Control Data corporation) and Bay Area Seating (BAS).

KEY PRODUCTS AND SERVICES

- Approximately 75% of TICKETMASTER's 1977 revenues were generated by specialty ticketing services offered in an interactive remote computing mode. The other 25% of revenues were generated by the sale of its proprietary turnkey ticket printing system. Management expects turnkey systems to be generating the bulk of revenues by year end 1978. Although the company also provides its customers with professional services (consulting), these are offered only in conjunction with its other products and services.
- The specialty processing services are provided through TICKETMASTER's two branches in Albuquerque and El Paso. Clients access the central data base via a total of 35 on-site Perkin Elmer CRTs. The tickets are printed on-site by Di-An ticket printers. TICKETMASTER provides users with blank ticket stock and communications lines to access the data base.
- The company offers a dual processor turnkey system for auditorium and community ticketing and sales management. It licenses the TICKETMASTER name with the equipment.
 - To date, one turnkey system has been installed: in Norway. It has 13 terminals now and management anticipates the client will install an additional 15 terminals during 1978. It is also negotiating with a prospective client in France to install a 100 terminal TICKETMASTER system.
 - The other two installed systems, at TICKETMASTER Corporation branch locations, are used to provide the remote computing services.

* INPUT Estimate

February 1978

COMPANY HIGHLIGHT/TICKETMASTER CORPORATION

- The host processors are Digital Equipment Corporation PDP-11 computers. User terminals consist of Perkin Elmer CRTs and Di-An ticket printers assembled for TICKETMASTER by Hartronics. All the software is developed and installed by TICKETMASTER, including operating systems, applications software, and hardware interfaces.
- Maintenance on the DEC equipment is provided by DEC. All software and terminal equipment is maintained by TICKETMASTER. In some cases, the company has trained user personnel to maintain their own in-house terminals.

INDUSTRY MARKETS Entertainment.

GEOGRAPHIC MARKETS Approximately 75% of TICKETMASTER's revenues are derived from the Southern U.S. (New Mexico and Texas). The other 25% of revenues are from Europe.

COMPUTER HARDWARE AND SOFTWARE

- Dual DEC PDP/11-34s containing the customer data bases are installed in Albuquerque for remote computing. Clients access this data base via 32 leased lines. Two DEC 11/34s in Phoenix are used for software development.
- The DEC 11/34s in Norway are installed as part of the turnkey system at the client's location.

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

May 1994

Timberline Software Corporation

Chairman & President : John Gorman
9600 SW Nimbus Avenue
Beaverton, OR 97005-7163
Phone: (503) 626-6775
Fax: (506) 526-8299

Status:	Public
Employees:	214 (12/93)
Revenue:	\$18,204,693
Fiscal Year End:	12/31/93

Key Points

- Timberline® Software Corporation provides accounting and management computer software products to the construction, property management and architecture/engineering industries.
- Total 1993 revenue reached \$18.2 million, a 22% increase over 1992 revenue of \$14.9 million.
- In early 1994, Timberline signed an agreement with McDonald's Corporation to develop a marketing program based on McDonald's use of Timberline's Precision Extended estimating software.

- In 1994, the company plans to upgrade all Timberline software to comply with Open Database Connectivity (ODBC)—a data exchange methodology developed by Microsoft® that has been accepted as an industry standard.

Company Description

Timberline Software Corporation develops, markets and supports accounting and management information computer software primarily for the construction, property management, and architecture and engineering industries. The company offers four software product lines—construction accounting, estimating, property management, and architect and engineer.

- Prior to its incorporation in 1979, the company operated for approximately eight years as a division of a subsidiary of

Orbanco Financial Services, Inc., a bank holding company based in Portland (OR). In 1979, the company acquired substantially all of the assets and liabilities of that division.

- The company operated as Timberline Systems, Inc. through 1986 and also sold Texas Instruments (TI) computers with its minicomputer software products. This hardware resale business was discontinued in March 1986 and the company changed its name to Timberline Software Corporation to more accurately reflect its software product business.

Structure and Operations

Headquartered in Beaverton (OR), the company has regional sales offices in Los Angeles (CA), Denver (CO), Dallas (TX), Boston (MA), New York (NY), Concord (NC) and Pompano Beach (FL).

Timberline is currently organized into four product-oriented business units, each responsible for its own product content, development and support. These units include:

- Construction Accounting division has 68 employees and contributed approximately \$4.38 million (40%) to Timberline's 1993 software sales.
- Construction Estimating division has 37 employees and contributed about \$3.79 million (34%) to Timberline's 1993 software sales.
- Property Management division has 37 employees and contributed approximately

\$2.18 million (20%) to Timberline's 1993 software sales.

- Architects and Engineers division has 13 employees and accounted for approximately \$0.60 million (5%) of Timberline's 1993 software sales.

Administrative functions stay in the Timberline Corporate Unit.

Company Strategy

Timberline is investing generously in improving its product development and customer support.

The company has moved through four major technological environments—minicomputers, early microcomputers, DOS and now, the graphical world, and has rebuilt its product line each time.

Timberline is moving all of its products to a Graphical User Interface (GUI) environment. The Construction Gold product was first in this development effort and the company is currently working on its Estimating, Property Management, and Architects and Engineers product lines.

Timberline's Construction Accounting has a two-tier product strategy—the Construction Gold for high-end users whose needs include management decision-making and accounting, and the Medallion line for users with less complex needs.

As part of product development, Timberline has developed an ODBC driver that enables customers to have outside access to a proprietary database, using off-the-shelf

software. This will increase the usefulness of Timberline's products.

Financials

Total 1993 revenue reached \$18.2 million, a 22% increase over 1992 revenue of \$14.9

million. Net income rose 89%, from \$327.7 thousand in 1992 to \$620.1 thousand in 1993. A five-year financial summary follows:

Timberline Software Corporation Five-Year Financial Summary (\$ Thousands, except per share data)

Item	Fiscal Year				
	1993	1992	1991	1990	1989
Revenue	\$18,205	\$14,902	\$12,697	\$12,684	\$10,741
• Percent increase from previous year	22%	17%	--	18%	20%
Income before taxes	\$950	\$416	\$20	\$711(a)	\$1,255
• Percent increase from previous year	128%	*	(97%)	(43%)	70%
Net income	\$620	\$328	\$16	\$429	\$769
• Percent increase from previous year	89%	*	(96%)	(44%)	72%
Earnings per share	\$0.27	\$0.14	\$0.01	\$0.18	\$0.31
• Percent increase from previous year	93%	*	(94%)	(42%)	72%

(a) Includes write-offs of notes receivable of \$161,000 associated with Financial Software Associates Corporation, a joint venture supplying software to accountants.

- Over 1000%

The revenue increases in 1993 and 1992 were attributed to the following factors:

- Introduction of new products, principally Construction Gold
- Increased sales by the company's dealer channel
- Direct sales to large national accounts

Research and development expenditures were approximately \$732,000 (4% of revenue) in 1993, compared to \$704,000 (5% of revenue) in 1992.

Interim results: Revenue for the three months ending March 31, 1994 reached \$4.68 million, a 14% increase over \$4.11 million for the same period in 1993. Net income for the period rose 238%, from \$13,000 to \$44,000 in 1994. Timberline's Construction Gold financial management software was a significant contributor to the first quarter revenue.

Software sales grew 7% to \$2.68 million in the first quarter of 1994 from \$2.52 million in 1993. Service fees from support, maintenance and training increased 24% to \$1.89 million in

the first quarter of 1994 versus \$1.53 million for the same quarter in 1993.

Market Financials

Timberline's software products are used by the construction, property management, and architecture and engineering industries.

Between 72% and 74% of Timberline's total 1993 revenue was derived from the

construction industry, 20% from property management and 5% from architecture/engineering industries.

Revenue Analysis by Product Line

Approximately 60% of Timberline's 1993 revenue was derived from software products, 38% from professional services and 2% from other support fees. A three-year summary of source of revenue follows:

Timberline Software Corporation
Three-Year Source of Revenue Summary
 (\$ thousands)

Item	Fiscal Year					
	1993		1992		1991	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Software products	\$11,009	60%	\$8,676	58%	\$7,644	60%
Services (a)	6,956	38%	6,026	40%	4,780	38%
Other (b)	240	2%	200	2%	273	2%
Total	\$18,205	100%	\$14,902	100%	\$12,697	100%

(a) Includes maintenance and support, training and consulting.

(b) Includes other support services.

Construction and estimating accounted for between 72% and 74% of software sales for the years 1993, 1992 and 1991. Property management sales grew to 20% of total software sales in 1993, from 18% in 1992 and 10% in 1991. Architects and Engineers accounted for 5% of software sales in 1993 and 7% of sales in 1992 and 1991.

Service fees from support, maintenance and training increased 15% and 26% in 1993 and 1992 respectively.

This increase was attributed to the following:

- Growing customer base
- Increase in the number of training classes offered
- Increased demand from large national accounts for on-site consulting

Geographic Markets

Timberline markets its products and services primarily in the U.S. The company also licenses its software products into Canada, Australia, New Zealand and other foreign countries.

Over 90% of Timberline's 1993 revenue was derived from the U.S. Revenue from international markets accounted for less than 10% of total revenue.

Employees

As of December 31, 1993, Timberline had approximately 214 employees, segmented as follows:

Marketing and sales	34
Customer support	72
Research and development.....	65
Computer operations	7
General and administrative	36
	214

- The company currently has 223 employees.

Key Products and Services

The company has four software product lines—construction accounting, estimating, property management, architect and engineer.

Construction Accounting consists of two different levels of software:

- The Medallion® line of software operates only in the DOS operating environment. It is designed specifically for the homebuilder/remodeler and small to medium-sized general and specialty contractors.

The Medallion Collection products include:

- Accounts Payable
 - Accounts Receivable
 - Equipment Management
 - General Ledger
 - HomeBuilder
 - HomeBuilder Payroll
 - Inventory
 - Job Cost
 - Payroll Plus
 - Progress Billing
 - Purchasing Management
 - Receivables Management
 - TS-Bridge
 - TS-Report I
 - TS-Report II
- The Construction Gold line of software operates in the Windows and OS/2 operating environments. It is designed specifically for medium to large-sized construction companies and other users with more advanced accounting and management information needs. Construction Gold products include:
- Accounts Payable
 - General Ledger Plus
 - Job Cost
 - Payroll
 - Receivables
 - Executive Information Systems
 - TS-REPORT
 - ODBC Driver
 - MICR Interface

Estimating software is designed to allow an estimator to compile a bid on construction projects based on parameters such as the architectural design, building materials required and material and labor costs.

- The Precision Collection® is a family of integrated estimating software applications that is fully integrated with the Medallion collection of accounting software. The Precision Collection products include:

- Bid Analysis
- Buyout
- Cut & Fill
- Databases
- Digitizer
- Means Timberline Databases
- Estimating
- Estimating Plus
- Estimating Extended
- Pricer
- Estimating Light
- CAD Importer
- CAD Integrator
- Means Integrator
- Microsoft® Project Integrator
- Microsoft® Project for Windows Integrator
- Primavera Integrator

Property Management software is an accounting and management information system designed for managers of residential and commercial properties.

It provides information to the managers regarding revenues and expenses of various properties and generates financial reports about the properties to various owners, as well as reports containing tenant and lease information about the properties. Software products include:

- Property Management Gold is designed for the medium to large-sized property management companies.

- SitePro is designed specifically for on-site managers of residential properties to enable them to track financial and tenant information.

Architects and Engineers software is an accounting and management information system for architectural and engineering firms that is designed to provide basic accounting information along with the capability to generate billing information on a project basis. Software products include:

- AEasy
- AEasy Plus
- TimeTrax

TimeTrax, the company's new Architects and Engineers software product, is designed to enhance and streamline the process of time entry into systems that track billable time and labor costs.

Professional Services

The company offers maintenance, support, training and consulting services.

- Maintenance contracts allow the user to obtain program changes and enhancements as they are released.
- Support contracts allow the user to obtain telephone support from the customer support department that answers applications-related questions.
- Users may pay a fee to attend classes offered to learn about the use of Timberline's software and obtain customized training at the user site and other consulting services.

Clients

Timberline's customers include—McDonalds, Cushman & Wakefield, Teachers Insurance and Annuity Association among others.

Marketing and Sales

The company markets its software products and services primarily in the U.S. The company also licenses its software products into Canada, Australia, New Zealand and other foreign countries.

Virtually all product distribution is handled by value-added dealers and distributors. A direct sales force complements the dealer channel and handles sales to national accounts and large companies.

Timberline maintains a telemarketing staff to sell maintenance and support service contracts and classroom training to its customer base.

Competition

Timberline's major competitors, by product line, include the following:

- Construction—Construction Data Control, Software Shop, Concord and Maxwell.

- Estimating—MC2, G2 and Construction Data Control.
- Property Management—Jonas & Erickson, Skyline and TenMan.
- Architecture/engineering—ACCI, Harper-Shuman and Wind-2 One.

INPUT Assessment

Timberline's strengths include its high quality software products that are flexible and user-friendly and efficient customer support service that it provides to its users.

A big challenge faced by Timberline is to increase acceptance for its products after moving to a graphical user interface (GUI) environment. The company has had tremendous success with its Construction Gold product and GUI development effort is under way for the Estimating, Property Management, and Architects & Engineers product line.

COMPANY PROFILE

TIMBERLINE SOFTWARE CORPORATION

9600 S.W. Nimbus
Beaverton, OR 97005-7163
(503) 626-6775

John A. Gorman, Chairman and President
Public Corporation, NASDAQ
Total Employees: 192 (12/91)
Total Revenue, Fiscal Year End
12/31/91: \$12,697,204

The Company

Timberline Software Corporation primarily provides microcomputer-based accounting and information management applications software products to three target markets-- construction, property management, and architecture/engineering.

- Prior to its incorporation in 1979, the company operated for approximately eight years as a division of a subsidiary of Orbanco Financial Services, Inc., a bank holding company based in Portland (OR). In 1979, the company acquired substantially all of the assets and liabilities of that division.
- The company operated as Timberline Systems, Inc. through 1986 and also sold Texas Instruments (TI) computers with its minicomputer software products. This hardware resale business was discontinued in March 1986, and the company changed its name to Timberline Software Corporation to more accurately reflect its software product business. Timberline continues to provide minicomputer software and related services to TI users.

During 1990, to better manage the company's growth, Timberline formed product-oriented business units, each responsible for its own product content, development, and support. Beginning in 1992, each business unit also has a sales manager responsible for revenue generation and distribution strategies, allowing each unit to seek out its most appropriate sales channels.

- These units include Property Management, Construction Accounting, Construction Estimating, and Architect/Engineering.
- Administrative functions stay in the Timberline Corporate Unit.

Total 1991 revenue was \$12.7 million, the same as in 1990. Net income declined to \$16,000, from \$429,000 in 1990. A five-year financial summary follows:

**TIMBERLINE SOFTWARE CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1991	1990	1989	1988	1987
Revenue	\$12,697	\$12,684	\$10,741	\$8,980	\$7,653
• Percent increase from previous year	--	18%	20%	17%	6%
Income before taxes	\$20	\$711	\$1,255	\$737	\$633
• Percent increase (decrease) from previous year	(97%)	(43%)	70%	16%	403%
• Gross margin	--	6%	12%	8%	8%
Net income	\$16	\$429	\$769	\$446	\$413
• Percent increase (decrease) from previous year	(96%)	(44%)	72%	8%	372%
• Net margin	--	3%	7%	5%	5%
Earnings per share	\$0.01	\$0.18	\$0.31	\$0.18	\$0.16
• Percent increase (decrease) from previous year	(94%)	(42%)	72%	13%	367%

(a) Includes write-offs of notes receivable of \$161,000 associated with Financial Software Associates Corporation, a joint venture supplying software to accountants.

Timberline management attributes results in 1991 to the following:

- Software sales decreased 12% in 1991 due to declines in sales by the authorized dealer network, national accounts, international sales, and direct telemarketing sales. Depressed conditions in the construction industry, which started in 1990, persisted throughout the year.
- The sales mix by product line has remained relatively constant during the past several years, with estimating and construction accounting product sales comprising about 80% of total software sales. Property management product sales have increased slightly to 10% of software sales in 1991, from 7% in 1990 and 6% in 1989. Architech/engineer and other product sales have remained constant at about 10% of software sales.
- Fees from support, maintenance, and training increased 34% during 1991, resulting from a more aggressive marketing effort to promote support and maintenance programs and from expansion of the number and variety of training classes.

- Operating expenses for 1991 increased 10% over 1990. Personnel cost increases accounted for over half of the total increase. Timberline added people to maintain its product development schedules and to support the increased number of subscribers for customer support, training, and consulting.

Timberline competitors, by product line, include the following:

- Property management: Jonas & Erickson, Skyline, and TenMan
- Construction: Construction Data Control, Software Shop, Concord, and Maxwell
- Estimating: MC², G2, and Construction Data Control
- Architecture/engineering: ACCI, Harper-Shuman, and Wind-2 One

Key Products and Services

A three-year summary of source of revenue follows:

TIMBERLINE SOFTWARE CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
 (\$ thousands)

ITEM	FISCAL YEAR					
	1991		1990		1989	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software products	\$7,644	60%	\$8,713	69%	\$7,643	71%
Training and support	4,780	38%	3,555	28%	2,549	24%
Other (a)	273	2%	416	3%	549	5%
TOTAL	\$12,697	100%	\$12,684	100%	\$10,741	100%

(a) Includes minicomputer hardware sales of \$215,000 in 1990 and \$281,000 in 1989.

Timberline offers more than 40 applications for construction, property management, and architecture/engineering. A summary of Timberline's software products is shown in the exhibit.

- Timberline is now designing OS/2-based products for high-end users and DOS Windows-based systems for its midrange software.

EXHIBIT

TIMBERLINE SOFTWARE PRODUCTS

PRODUCT	DESCRIPTION
Microcomputer Software	
Medallion Collection	
- Medallion/Builder	Small homebuilder and remodeler information management system
- Medallion/General	General contractor information management system
- Medallion/Specialty	Specialty contractor information management system
- TenanTrac	Residential property manager information management system
- AEasy Plus	Project management and accounting system for architects and engineers
- AEasy	Basis version of AEasy Plus for individual architects and engineers and small firms
- HomeBuilder	Low-cost, entry-level system for small home builders and remodelers
- Custom Financial Statements	Construction industry financial system
- Purchasing Management	Construction purchasing management system
Medallion Property Management Gold	OS/2 information management system for medium- and large-size property management
Precision Collection	
- Bid Analysis	Estimating software for the construction industry
- Buyout	
- Cut & Fill	
- Digitizer	
- Estimating	
- Estimating Plus	
- Pricer	
- Estimating Light	
- CAD Importer	
- CAD Integrator	
- Primavera Integrator	
Minicomputer Software (TI)	
Management Accounting for Construction (MAC)	Construction information management system
PROMT	Property management accounting system for residential and commercial properties
REALTRUST	Property management accounting system for real estate divisions of bank trust departments

Timberline's Medallion[®] Collection of microcomputer software products are designed for DOS and OS/2 operating environments.

- Versions of the software are available for IBM and compatible microcomputers.
- The Medallion Collection includes a core set of accounting applications - General Ledger, Payroll, Accounts Payable, Accounts Receivable, Fixed Assets, Inventory, and Customer Reporter - and various vertical market products.

Property Management Gold software for medium- and large-size property managers runs on IBM's OS/2.

- Timberline is developing a new DOS-based module for automating rent collection and reporting, and occupancy tracking for the unit level of residential management.

Timberline plans to release a Construction Accounting Gold product for OS/2 and Windows during 1992.

Timberline's minicomputer software for TI minicomputers consists of a core set of accounting-oriented software programs with industry-specific software for construction and property management applications. Timberline continues to support, but no longer actively markets, these products.

Timberline software users may purchase maintenance and support from Timberline through yearly contracts.

- Maintenance fees allow the user to obtain program changes and enhancements as they are released and telephone access to Timberline's customer support department for answering system-related questions and general problem solving.
- Users may pay a fee to attend classes held to learn about the use of Timberline's software, to obtain customized training at the user's site, and other consulting services.

Industry Markets

Timberline's software products are used by the construction, property management, and architecture/engineering industries.

Virtually all product distribution is now being handled by value-added dealers and distributors.

- Timberline maintains a small telemarketing staff to sell the Medallion HomeBuilder product and other entry-level, low-cost products. To date, these sales have not been significant.
- Timberline's National Accounts program was introduced in late 1989 to coordinate sales of Property Management Gold and Precision Collection products to large contractors and construction and facilities management divisions of large U.S. corporations. Senior sales and support personnel work in conjunction with dealers who subscribe to the program to sell to national accounts and other large customers.

Timberline's college program offers construction management schools complimentary copies of Precision Estimating. More than 200 colleges and universities have enrolled in this program.

During 1991, Timberline made three of the largest sales in its history with McDonald's Corporation (for Precision Estimating), Cushman & Wakefield (for Property Management Gold), and Boston Financial Group (for Property Management Gold).

Geographic Markets

More than 95% of Timberline's revenue is derived from the U.S. The company also sells its products in Canada, New Zealand, and Australia.

COMPANY PROFILE

TIMBERLINE SOFTWARE CORPORATION

9405 S.W. Gemini
Beaverton, OR 97005
(503) 626-6775

John A. Gorman, Chairman and President
Public Corporation, NASDAQ
Total Employees: 167 (12/90)
Total Revenue, Fiscal Year End
12/31/90: \$12,683,989

The Company

Timberline Software Corporation primarily provides microcomputer-based accounting and information management application software products to three target markets - construction, property management, and architecture/engineering.

- Prior to its incorporation in 1979, the company operated for approximately eight years as a division of a subsidiary of Orbanco Financial Services, Inc., a bank holding company based in Portland (OR). In 1979, the company acquired substantially all of the assets and liabilities of that division.
- The company operated as Timberline Systems, Inc. through 1986 and also sold Texas Instruments (TI) computers with its minicomputer software products. This hardware resale business was discontinued in March 1986, and the company changed its name to Timberline Software Corporation to more accurately reflect its software product business. Timberline continues to provide minicomputer software and related services to TI users.

During 1990, to better manage the company's growth, Timberline formed product-oriented business groups, each responsible for its own product content, development, and support.

- These groups include Property Management, Construction Accounting, and Construction Estimating.
- Marketing, distribution, and administrative functions stay in the Timberline Corporate Unit.

Total 1990 revenue reached \$12.7 million, an 18% increase over 1989 revenue of \$10.7 million. Net income declined 44%, from \$769,439 in 1989 to \$429,492 in 1990. A five-year financial summary follows:

**TIMBERLINE SOFTWARE CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1990	1989	1988	1987	1986
Revenue	\$12,684	\$10,741	\$8,980	\$7,653	\$7,200
• Percent increase (decrease) from previous year	18%	20%	17%	6%	(34%)
Income (loss) before taxes	\$711	\$1,255	\$737	\$633	\$(209)
• Percent increase (decrease) from previous year	(43%)	70%	16%	403%	(43%)
• Gross margin	6%	12%	8%	8%	N/A
Net income (loss)	\$429	\$769	\$446	\$413	\$(152)
• Percent increase (decrease) from previous year	(44%)	72%	8%	372%	(114%)
• Net margin	3%	7%	5%	5%	N/A
Earnings (loss) per share	\$0.18	\$0.31	\$0.18	\$0.16	\$(0.06)
• Percent increase (decrease) from previous year	(42%)	72%	13%	367%	^c (100%)

- (a) Includes write-offs of notes receivable of \$161,000 associated with Financial Software Associates Corporation.
- (b) Includes a one-time charge to earnings of \$235,000, net of taxes, or \$0.10 per share, related to the write-off of deferred development costs of a tax-preparation software product.

Timberline management attributes results in 1990 and 1989 to the following:

- Software sales increased approximately \$1.1 million in 1990 and \$1.3 million in 1989 due to volume growth, rather than price increases. The primary growth was generated by the company's authorized dealer network. In late 1989, Timberline started a program to focus on sales to the construction divisions of Fortune 1000 corporations and large contractors, which also contributed to the 1990 increase. International and direct telemarketing sales also showed significant growth in 1990.
- Sales of estimating and construction accounting products were approximately 80% of total software sales in 1990 and 1989, up from approximately 70% in 1988. In both 1990 and 1989, sales

of the Precision Estimating product line grew 30% over the preceding year.

- Training and support fees increased 39% and 23% in 1990 and 1989, respectively. The increases resulted from a more aggressive marketing effort to get a large number of new and installed customers to attend training classes and subscribe to maintenance and support programs.
- Operating income decreased 33%, from \$1.1 million in 1989 to \$0.7 million in 1990 as operating expenses rose from \$8 million to \$10.1 million. Over 70% of the increase was due to increased personnel costs, primarily in the sales, product development, and support areas.
- 1990 results also include a loss of \$161,000 associated with Timberline's investment in Financial Software Associates Corporation (FSAC).
 - FSAC was formed in 1989 as a separate organization to develop and market accounting software to Timberline's accountant clients based on Timberline's OS/2 General Ledger module.
 - In December 1990, FSAC defaulted on certain repayments and Timberline took possession of substantially all of FSAC's assets.

Timberline competitors, by product line, include the following:

- Property management: Jonas & Erickson, Skyline, and TenMan
- Construction: Construction Data Control, Software Shop, Concord, and Maxwell
- Estimating: MC², G2, and Construction Data Control
- Architecture/engineering: ACCI, Harper-Shuman, and Wind-2 One

Key Products and Services

A three-year summary of source of revenue follows:

**TIMBERLINE SOFTWARE CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

	FISCAL YEAR					
	1990		1989		1988	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software products						
- Microcomputer	\$8,504	67%	\$7,357	68%	\$5,974	67%
- Minicomputer	209	2%	286	3%	392	4%
	\$8,713	69%	\$7,643	71%	\$6,366	71%
Minicomputer hardware	\$215	2%	\$281	3%	\$271	3%
Training and support	\$3,555	28%	\$2,549	24%	\$2,079	23%
Other	\$201	1%	\$268	2%	\$264	3%
TOTAL	\$12,684	100%	\$10,741	100%	\$8,980	100%

Timberline offers more than 40 applications for construction, property management, and architecture/engineering. A summary of Timberline's software products is shown in the exhibit.

- Timberline is now designing OS/2-based products for high-end users and DOS Windows-based systems for its midrange software.

Timberline's Medallion[®] Collection of microcomputer software products are designed for DOS and OS/2 operating environments.

- Versions of the software are available for IBM and compatible microcomputers.
- The Medallion Collection includes a core set of accounting applications - General Ledger, Payroll, Accounts Payable, Accounts Receivable, Fixed Assets, Inventory, and Customer Reporter - and various vertical market products.

The Precision Collection[®] family of integrated estimating products for DOS-based microcomputers was expanded during 1990 with Precision Extended, an add-on product to the Precision Estimating module.

EXHIBIT

TIMBERLINE SOFTWARE PRODUCTS

PRODUCT	DESCRIPTION
<p>Microcomputer Software</p> <p>Medallion Collection</p> <ul style="list-style-type: none"> - Medallion/Builder - Medallion/General - Medallion Specialty - AEPEX <p>- TenanTrac</p> <p>- AEasy</p> <p>- HomeBuilder</p> <p>- Custom Financial Statements</p> <p>- Purchasing Management</p> <p>Medallion Property Management Gold</p> <p>Precision Collection</p> <ul style="list-style-type: none"> - Bid Analysis - Cut & Fill - Digitizer - Estimating - Estimating Plus - Pricer - Estimating Light - CAD Importer - CAD Integrator - Primavera Integrator 	<p>Small homebuilder and remodeler information management system</p> <p>General contractor information management system</p> <p>Specialty contractor information management system</p> <p>Project management and accounting system for architects and engineers</p> <p>Residential property manager information management system</p> <p>Version of AEPEX for individual architects, engineers, and small firms</p> <p>Low-cost, entry-level system for small home builders and remodelers</p> <p>Construction industry financial system</p> <p>Construction purchasing management system</p> <p>OS/2 information management system for medium- and large-size property management</p> <p>Estimating software for the construction industry</p>
<p>Minicomputer Software</p> <p>Management Accounting for Construction (MAC)</p> <p>PROMT</p> <p>REALTRUST</p>	<p>Construction information management system</p> <p>Property management accounting system for residential and commercial properties</p> <p>Property management accounting system for real estate divisions of bank trust departments</p>

Medallion Gold Property Management, released in November 1988, is a new generation of software for medium and large-size property managers designed to run on IBM's OS/2.

- Timberline plans to release a Medallion Gold Construction product for OS/2 during 1992.

Other products scheduled for release during 1991 include Precision Architectural and AEasy Plus for architects and engineers, and modules to expand construction accounting and property management applications.

Timberline's minicomputer software for TI minicomputers consists of a core set of accounting-oriented software programs with industry-specific software for construction and property management applications. Timberline continues to support, but no longer actively markets, these products.

Timberline software users may purchase maintenance and support from Timberline through yearly contracts.

- Maintenance fees allow the user to obtain program changes and enhancements as they are released and telephone access to Timberline's customer support department for answering system-related questions and general problem solving.
- Users may pay a fee to attend classes held to learn about the use of Timberline's software, to obtain customized training at the user's site, and other consulting services.

Industry Markets

Timberline's software products are used by the construction, property management, and architecture/engineering industries.

Virtually all product distribution is now being handled by value-added dealers and distributors.

- Prior to August 1985, Timberline software was sold by the company's own sales staff located in regional offices throughout the U.S.
- During 1985, Timberline signed two agreements with IBM whereby IBM markets Timberline's microcomputer construction software to IBM product centers, its direct sales force, and IBM-authorized dealers. Sales from these agreements have not met the company's expectations and have not been significant since 1987.

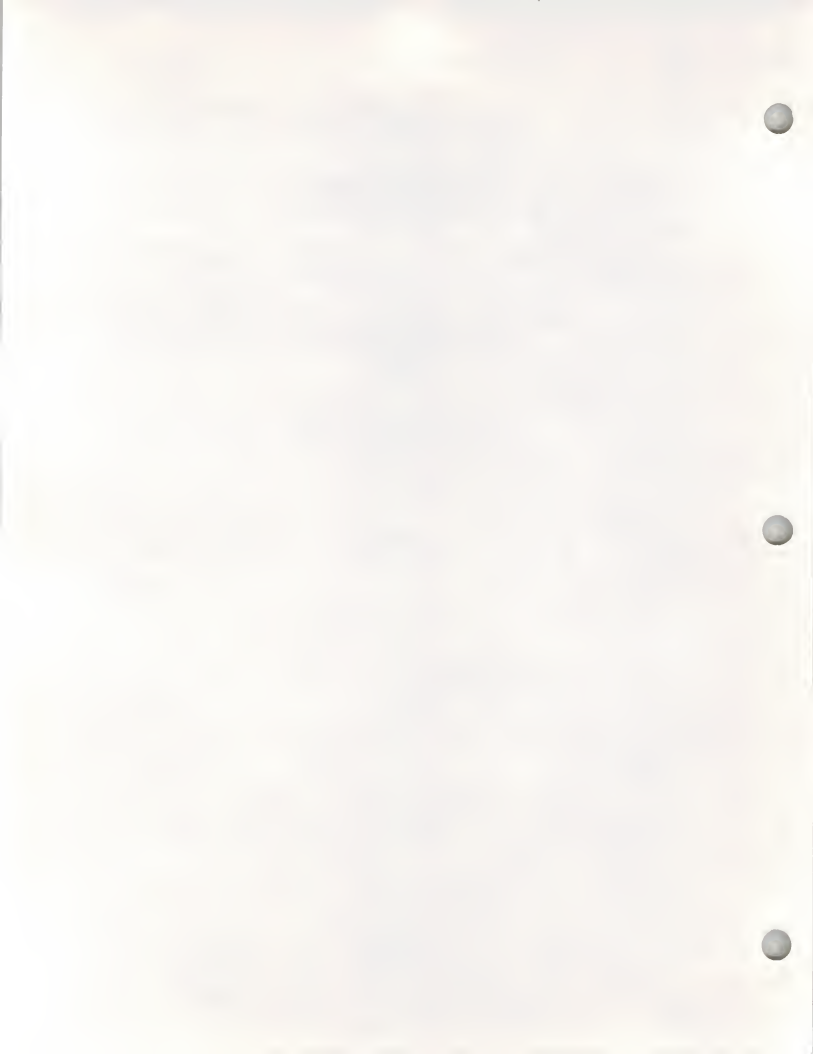
- Timberline maintains a small telemarketing staff to sell the Medallion HomeBuilder product and other entry-level, low-cost products. To date, these sales have not been significant.

Timberline's college program offers construction management schools complimentary copies of Precision Estimating. More than 200 colleges and universities have enrolled in this program.

Timberline's National Accounts program was introduced in late 1989 to coordinate sales of Property Management Gold and Precision Collection products to large contractors and construction and facilities management divisions of large U.S. corporations. Senior sales and support personnel work in conjunction with dealers who subscribe to the program to sell to national accounts and other large customers.

Geographic Markets

More than 95% of Timberline's revenue is derived from the U.S. The company also sells its products in Canada, New Zealand, and Australia.



COMPANY PROFILE

TIMBERLINE SOFTWARE CORPORATION

9405 S.W. Gemini
Beaverton, OR 97005
(503) 626-6775

John A. Gorman, Chairman and President
Public Corporation, OTC
Total Employees: 149 (3/90)
Total Revenue, Fiscal Year End
12/31/89: \$10,741,092

The Company

Timberline Software Corporation primarily provides microcomputer-based accounting and information management application software products to three target markets - construction, property management, and architecture/engineering.

- Prior to its incorporation in 1979, the company operated for approximately eight years as a division of a subsidiary of Orbanco Financial Services, Inc., a bank holding company based in Portland (OR). In 1979, the company acquired substantially all of the assets and liabilities of that division.
- The company operated as Timberline Systems, Inc. through 1986 and also sold Texas Instruments (TI) computers with its minicomputer software products. This hardware resale business was discontinued in March 1986, and the company changed its name to Timberline Software Corporation to more accurately reflect its software product business. Timberline continues to provide minicomputer software and related services to TI users.

Total 1989 revenue reached \$10.7 million, a 20% increase over 1988 revenue of \$9 million. Net income rose 72%, from \$446,000 in 1988 to \$769,439 in 1989. A five-year financial summary follows:

**TIMBERLINE SOFTWARE CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1989	1988	1987	1986	1985
Revenue	\$10,741	\$8,980	\$7,653	\$7,200	\$10,914
• Percent increase (decrease) from previous year	20%	17%	6%	(34%)	5%
Income (loss) before taxes	\$1,255	\$737	\$633	\$(209)	\$(146)
• Percent increase (decrease) from previous year	70%	16%	403%	(43%)	26%
• Gross margin	12%	8%	8%	N/A	N/A
Net income (loss)	\$769	\$446	\$413	\$(152)	\$(71)
• Percent increase (decrease) from previous year	72%	8%	372%	(114%)	54%
• Net margin	7%	5%	5%	N/A	N/A
Earnings (loss) per share	\$0.31	\$0.18	\$0.16	\$(0.06)	\$(0.03)
• Percent increase (decrease) from previous year	72%	13%	367%	(100%)	50%

(a) Includes a one-time charge to earnings of \$235,000, net of taxes, or \$0.10 per share, related to the write-off of deferred development costs of a tax-preparation software product.

Timberline management attributes revenue growth in 1989 and 1988 to the following:

- Microcomputer software sales increased 23% in 1989 and 24% in 1988, due largely to the increased productivity of the company's authorized dealer network and market acceptance of the company's latest software offerings.
- Precision Estimating had a five-fold increase in sales in 1988 and continued its strong growth in 1989.
- Sales in 1989 were also boosted by significant increases in sales of HomeBuilder and Property Management Gold, which were first introduced in mid-1988.

- International sales, which started in Australia and New Zealand in 1989, were not a significant contributor to the 1989 increase.
- Training and support revenue increased 23% in 1989 and 31% in 1988 as the result of increased annual maintenance and support fees from new customers and a more aggressive marketing effort to get a larger percentage of the customer base on annual maintenance and support contracts.
- Minicomputer hardware and software sales have continued to decline, reflecting the industry-wide weakness in minicomputer sales.

Timberline competitors, by product line, include the following:

- Property management: Jonas & Erickson, Skyline, and TenMan
- Construction: Construction Data Control and Software Shop
- Estimating: MC² and Techsonix
- Architecture/engineering: ACCI, Harper-Shuman, and Wind-2 One

Key Products and Services

A three-year summary of source of revenue follows:

**TIMBERLINE SOFTWARE CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

ITEM	FISCAL YEAR					
	1989		1988		1987	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software products						
- Microcomputer	\$7,357	68%	\$5,974	67%	\$4,825	63%
- Minicomputer	286	3%	392	4%	688	9%
	\$7,643	71%	\$6,366	71%	\$5,513	72%
Minicomputer hardware	\$281	3%	\$271	3%	\$197	2%
Training and support	\$2,549	24%	\$2,079	23%	\$1,586	21%
Other	\$268	2%	\$264	3%	\$357	5%
TOTAL	\$10,741	100%	\$8,980	100%	\$7,653	100%

Timberline offers more than 40 applications for construction, property management, and architecture/engineering. A summary of Timberline's software products is shown in the exhibit.

Timberline's Medallion[®] Collection of microcomputer software products are designed for DOS and UNIX/XENIX operating environments.

- Versions of the software are available for IBM and compatible microcomputers, and microcomputers from AT&T, Altos, and TI.
- The Medallion Collection includes a core set of accounting applications - General Ledger, Payroll, Accounts Payable, Accounts Receivable, Fixed Assets, Inventory, and Customer Reporter - and various vertical market products.

In November 1988, Timberline released Medallion Gold Property Management, a new generation of software for medium and large-size property managers designed to run on IBM's OS/2.

- Timberline plans to release a Medallion Gold Construction product for OS/2 during 1990.

EXHIBIT
TIMBERLINE SOFTWARE PRODUCTS

PRODUCT	DESCRIPTION
<p>Microcomputer Software</p> <p>Medallion Collection</p> <ul style="list-style-type: none"> - Medallion/Builder - Medallion/General - Medallion Specialty - AEPEX - TenanTrac - AEasy - HomeBuilder <p>Medallion Property Management Gold</p> <p>Precision Collection</p> <ul style="list-style-type: none"> - Bid Analysis - Cut & Fill - Digitizer - Estimating - Estimating Plus - Pricer - Estimating Light - CAD Importer - CAD Integrator - Primavera Integrator <p>Purchasing Management</p>	<p>Small homebuilder and remodeler information management system</p> <p>General contractor information management system</p> <p>Specialty contractor information management system</p> <p>Project management and accounting system for architects and engineers</p> <p>Residential property manager information management system</p> <p>Version of AEPEX for individual architects, engineers, and small firms</p> <p>Low-cost, entry-level system for small home builders and remodelers</p> <p>OS/2 information management system for medium- and large-size property management</p> <p>Estimating software for the construction industry</p>
<p>Minicomputer Software</p> <p>Management Accounting for Construction (MAC)</p> <p>PROMPT</p> <p>REALTRUST</p>	<p>Construction information management system</p> <p>Property management accounting system for residential and commercial properties</p> <p>Property management accounting system for real estate divisions of bank trust departments</p>

The Precision Collection[®] family of integrated estimating products for microcomputers was expanded during 1989 with the following products:

- Precision CAD Integrator links Precision Estimating software with Autodesk's AutoCAD AEC Architectural template, allowing a user to do estimating directly from a design made by AutoCAD.
- Precision CAD Importer creates an open architecture for Precision Estimating to interface with architectural templates that work with AutoCAD, and also integrates Precision Estimating with CAD products other than those based on AutoCAD.
- Precision Primavera Integrator links Precision Estimating software with Primavera Systems' project scheduling software.
- Timberline has also developed an interface linking Precision estimating software to scheduling software from Microsoft.
- Precision Estimating Light, introduced in July 1989, is an entry-level product for estimators in small construction companies. The product is designed to compete against generic spreadsheet-type products.

Timberline's minicomputer software is available for TI minicomputers and consists of a core set of accounting-oriented software programs with industry-specific software for construction and property management applications.

Timberline software users may purchase maintenance and support from Timberline through yearly contracts.

- Maintenance fees allow the user to obtain program changes and enhancements as they are released and telephone access to Timberline's customer support department for answering system-related questions and general problem solving.
- Users may pay a fee to attend classes held to learn about the use of Timberline's software, to obtain customized training at the user's site, and other consulting services.

Industry Markets

Timberline's software products are used by the construction, property management, and architecture/engineering industries.

Prior to August 1985, Timberline software was sold by the company's own sales staff located in regional offices throughout the U.S.

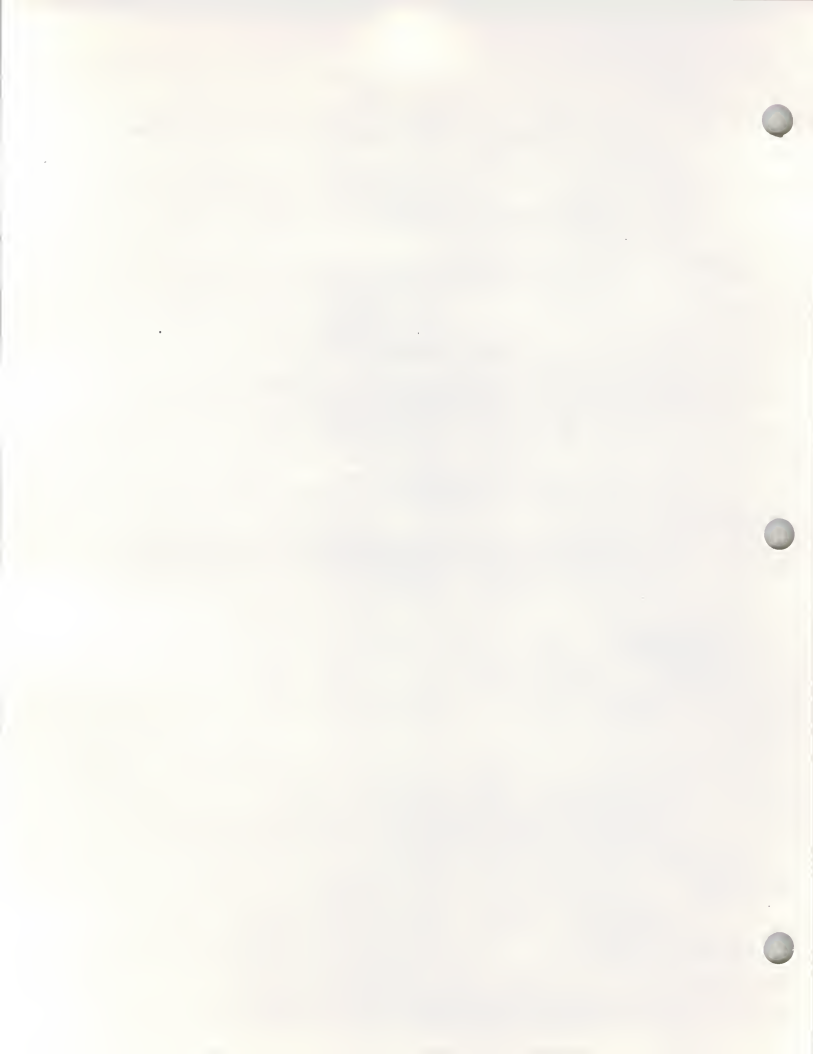
- In August 1985, Timberline eliminated its direct sales force and practically all product distribution is now being handled by value-added dealers and distributors.
- During 1985, Timberline signed two agreements with IBM whereby IBM markets Timberline's microcomputer construction software to IBM product centers, its direct sales force, and IBM-authorized dealers. Sales from these agreements have not met the company's expectations and have not been significant since 1987.
- Timberline maintains a small telemarketing staff to sell the Medallion HomeBuilder product and other entry-level, low-cost products. To date, these sales have not been significant.

Timberline's college program offers construction management schools complimentary copies of Precision Estimating. More than 200 colleges and universities have enrolled in this program.

During late 1989, Timberline instituted a National Accounts program. Senior sales and support personnel work in conjunction with dealers who subscribe to the program to sell to national accounts and other large customers.

Geographic Markets

More than 95% of Timberline's revenue is derived from the U.S. The company also sells its products in Canada, New Zealand, and Australia.



COMPANY PROFILE

TIMBERLINE SOFTWARE CORPORATION

9405 S.W. Gemini
Beaverton, OR 97005
(503) 626-6775

John A. Gorman, Chairman and President
Public Corporation, OTC
Total Employees: 119
Total Revenue, Fiscal Year End
12/31/88: \$8,980,267

The Company

Timberline Software Corporation primarily provides microcomputer-based accounting and information management application software products to three target markets-- construction, property management, and architect/engineering.

- Prior to its incorporation in 1979, the company operated for approximately eight years as a division of a subsidiary of Orbanco Financial Services, Inc., a bank holding company based in Portland (OR). In 1979, the company acquired substantially all of the assets and liabilities of that division.
- The company operated as Timberline Systems, Inc. through 1986 and also sold Texas Instruments (TI) computers with its minicomputer software products. This hardware resale business area was discontinued in March 1986 and the company changed its name to Timberline Software Corporation to more accurately reflect its software product business. Timberline continues to provide minicomputer software and related services to TI users.

1988 revenue reached nearly \$9 million, a 17% increase over 1987 revenue of \$7.7 million. Net income rose 8%, from \$413,000 in 1987 to \$446,000 in 1988. A five-year financial summary follows:

**TIMBERLINE SOFTWARE CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1988	1987	1986	1985	1984
Revenue	\$8,980	\$7,653	\$7,200	\$10,914	\$10,409
• Percent increase (decrease) from previous year	17%	6%	(34%)	5%	7%
Income (loss) before taxes	\$737	\$633	\$(209)	\$(146)	\$(197)
• Percent increase (decrease) from previous year	16%	403%	(43%)	26%	(125%)
Net income (loss)	\$446	\$413	\$(152)	\$(71)	\$(153)
• Percent increase (decrease) from previous year	8%	372%	(114%)	54%	(126%)
Earnings (loss) per share	\$0.18	\$0.16	\$(0.06)	\$(0.03)	\$(0.06)
• Percent increase (decrease) from previous year	13%	367%	(100%)	50%	(123%)

Timberline management attributes revenue growth in 1988 and 1987 to the following:

- Microcomputer software sales increase 24% during 1988 due to increased productivity of the company's dealer network and a five-fold increase in sales of the company's Precision Estimating software line. These sales increased 45% during 1987 due to the introduction of ten new products during the year and continued expansion of the dealer network.
- Training and support revenue increased 31% in 1988 and 4% in 1987 as the result of increased annual maintenance and support fees from new customers and a more aggressive marketing effort to get a larger percentage of the customer base on annual maintenance and support contracts.
- Minicomputer hardware and software sales have continued to decline, reflecting the industry-wide weakness in minicomputer sales.

Revenue for the six months ending June 30, 1989 reached \$5.2 million, a 21% increase over \$4.3 million for the same period in 1988. Net income for the period rose 20%, from \$240,000 to \$288,000.

Timberline competitors, by product line, include the following:

- Property management: Jonas & Erickson, Skyline, and TenMan
- Construction: Construction Data Control and Software Shop
- Estimating: MC2 and Techsonix
- Architect/engineering: ACCI, Harper-Shuman, and Wind-2 One

Key Products and Services

A three-year summary of source of revenue follows:

TIMBERLINE SOFTWARE CORPORATION THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ thousands)

ITEM	FISCAL YEAR					
	1988		1987		1986	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software products						
- Microcomputer	\$5,974	67%	\$4,825	63%	\$3,328	46%
- Minicomputer	392	4%	688	9%	1,433	20%
	\$6,366	71%	\$5,513	72%	\$4,761	66%
Minicomputer hardware	\$271	3%	\$197	2%	\$486	7%
Training and support	\$2,079	23%	\$1,586	21%	\$1,528	21%
Other	\$264	3%	\$357	5%	\$425	6%
TOTAL	\$8,980	100%	\$7,653	100%	\$7,200	100%

Timberline offers more than 40 applications for construction, property management, and architect/engineering. A summary of Timberline's software products is shown in the exhibit.

EXHIBIT
TIMBERLINE SOFTWARE PRODUCTS

PRODUCT	DESCRIPTION
<p>Microcomputer Software</p> <p>Medallion Collection</p> <ul style="list-style-type: none"> - Medallion/Builder - Medallion/General - Medallion Specialty - AEPEX <p>- TenanTrac</p> <p>- AEasy</p> <p>- HomeBuilder</p> <p>Medallion Gold Property Management</p> <p>Precision Collection</p> <ul style="list-style-type: none"> - Bid Analysis - Cut & Fill - Digitizer - Estimating - Estimating Plus - Pricer - Estimating Light - CAD Integrator - Primavera Integrator 	<p>Small homebuilder and remodeler information management system</p> <p>General contractor information management system</p> <p>Specialty contractor information management system</p> <p>Project management and accounting system for architects and engineers</p> <p>Residential property manager information management system</p> <p>Version of AEPEX for individual architects, engineers, and small firms</p> <p>Low-cost, entry-level system for small home builders and remodelers</p> <p>OS/2 Information management system for medium- and large-size property management</p> <p>Estimating software for the construction industry</p>
<p>Minicomputer Software</p> <p>Management Accounting for Construction</p> <p>PROMPT</p> <p>REALTRUST</p>	<p>Construction information management system</p> <p>Property management accounting system for residential and commercial properties</p> <p>Property management accounting system for real estate divisions of bank trust departments</p>

Timberline's Medallion[®] Collection of microcomputer software products are designed for DOS and UNIX/XENIX operating environments.

- Versions of the software are available for IBM and compatible microcomputers, and microcomputers from AT&T, Altos, and TI.
- The Medallion Collection includes a core set of accounting applications--General Ledger, Payroll, Accounts Payable, Accounts Receivable, Fixed Assets, Inventory, and Customer Reporter--and various vertical market products.
- In November 1988, Timberline released Medallion Gold Property Management, a new generation of software for medium and large-size property managers designed to run on IBM's OS/2.
- Timberline plans to release a Medallion Gold Construction product for OS/2 during the fourth quarter of 1989.

The Precision Collection[®] family of integrated estimating products for microcomputers was expanded during 1989 with the following products:

- Precision CAD Integrator links Precision estimating software with Autodesk's AutoCAD system, allowing a user to do estimating directly from a design made by AutoCAD.
- Precision Primavera Integrator links Precision estimating software with Primavera Systems' project scheduling software.
- Timberline has also developed an interface linking Precision estimating software to scheduling software from Microsoft.
- Precision Estimating Light, introduced in July 1989, is an entry-level product for estimators in small construction companies. The product is designed to compete against generic spreadsheet-type products.

Timberline's minicomputer software is available for TI minicomputers and consists of a core set of accounting-oriented software programs with industry-specific software for construction and property management applications.

Timberline software users may purchase maintenance and support from Timberline through yearly contracts.

- Maintenance fees allows the user to obtain program changes and enhancements as they are released and telephone access to Timberline's customer support department for answering system-related questions and general problem solving.
- Users may pay a fee to attend classes held to learn about the use of Timberline's software, to obtain customized training at the user's site, and other consulting services.

Industry Markets

Timberline's software products are used by the construction, property management, and architect/engineering industries.

Prior to August 1985, Timberline software was sold by the company's own sales staff located in regional offices throughout the U.S.

- In August 1985, Timberline eliminated its direct sales force and practically all product distribution is now being handled by value-added dealers and distributors.
- During 1985, Timberline signed two agreements with IBM whereby IBM markets Timberline's microcomputer construction software to IBM product centers, its direct sales force, and IBM-authorized dealers. Through this agreement, Timberline established a new distribution channel of over 2,400 independent dealers.
- Timberline maintains a small telemarketing staff to sell the Medallion HomeBuilder product and other entry-level, low-cost products. To date, these sales have not been significant.

Geographic Markets

Virtually all of Timberline's revenue is derived from the U.S. The company also sells its products in Canada, New Zealand, and Australia.

During 1988, Timberline chose its first overseas distributors.

- In Australia, Tactical Computer Services will sell Timberlines estimating and construction software; and Ledgerwood Associates will sell Timberline's architect/engineering and property management products.
- Timberline plans to name distributors in Canada and the U.K. during 1989.

COMPANY PROFILE

TIMBERLINE SOFTWARE CORPORATION
(formerly Timberline Systems, Inc.)
9405 S.W. Gemini
Beaverton, OR 97005
(503) 626-6775

John A. Gorman, Chairman and
President
Public Corporation, OTC
Total Employees: 106
Total Revenue, Fiscal Year End
12/31/86: \$7,200,455

THE COMPANY

- Timberline Software Corporation provides minicomputer and microcomputer application software products and associated support services to three target markets: the construction, property management, and architecture/engineering industries.
 - Prior to its incorporation in 1979, the company operated for approximately eight years as a division of a subsidiary of Orbanco Financial Services, Inc., a bank holding company located in Portland (OR).
 - From 1979 to March 1986 the company operated as Timberline Systems, Inc. and also sold Texas Instruments (TI) computers with its minicomputer software products. This business area was discontinued in March 1986. The company sold its remaining computer inventory to Poorman-Douglas Corporation and changed its name to Timberline Software Corporation to more accurately reflect its current business. Timberline Software continues to provide software and related services to TI users.
- 1986 revenue was \$7.2 million, a 34% decrease from 1985 revenue of \$10.9 million. Net losses were \$152,068, compared to net losses of \$71,423 for 1985. A five-year financial summary follows:

TIMBERLINE SOFTWARE CORPORATION

TIMBERLINE SOFTWARE CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	1986	1985	1984	1983	1982
Revenue	\$ 7,200	\$ 10,913	\$ 10,409	\$ 9,746	\$ 7,896
• Percent change from previous year	(34%)	5%	7%	23%	(22%)
Income (loss) before taxes	\$ (209)	\$ (146)	\$ (197)	\$ 795	\$ 433
• Percent change from previous year	(43%)	26%	(125%)	84%	122%
Net income (loss)	\$ (152)	\$ (71)	\$ (153)	\$ 600	\$ (72)
• Percent change from previous year	(114%)	54%	(126%)	933%	(126%)
Earnings (loss) per share	\$ (0.06)	\$ (0.03)	\$ (0.06)	\$ 0.26	\$ (0.03)
• Percent change from previous year	(100%)	50%	(123%)	967%	(125%)

- Timberline Software management attributes 1986 revenue declines to a combination of a slump in the minicomputer software market and its departure in March 1986 from the hardware reselling business which accounted for \$2.2 million of the \$4.1 million decrease.
 - All other sources of revenue increased during 1986. Microcomputer software sales increased 3% without the benefit of repeat business from the national dealer chains. Training and support fees rose 13% during 1986.
 - The company has decided not to develop any new minicomputer products, but will continue to support and maintain its current minicomputer product line for at least the next five years.
- During the past several years Timberline Software has spent most of its development efforts on its microcomputer software products. Total software development costs charged to operations were \$423,000 in 1986, \$901,000 in 1985, and \$602,000 in 1984. In addition, in 1986 the company capitalized approximately \$82,000 related to certain software development costs.
- In 1984 the company sold its tax preparation software product to Accountants' Library of Professional Software, a newly formed company composed of employees from Timberline who had developed the product.

TIMBERLINE SOFTWARE CORPORATION

- Because the venture was unsuccessful on its own, Timberline repossessed the software in September 1985, and marketed the product for the 1985/86 income tax season.
- In June 1986 Timberline Software sold the product to Aardvark/McGraw-Hill (a division of McGraw-Hill) for \$100,000, plus royalties through June 1991.
- Revenue for the six months ending June 30, 1987, was \$3.8 million, compared to \$3.7 million for the same period in 1986. Net income was \$101,000, compared to net losses of \$190,000 for the same period a year ago.
- As of December 31, 1986, Timberline Software had 106 employees. The company currently has about 115 employees.
- Major competitors by product area include the following:
 - Minicomputer software products.
 - Construction: IBM and various local or regional firms.
 - Property management: Jonas & Erickson and TenMan.
 - Microcomputer software products.
 - Construction: Software Shop and Libra Systems.
 - Architects/Engineers: Harper-Shuman, ACCI, and Data Basics.

KEY PRODUCTS AND SERVICES

- A three-year summary of source of revenue follows:

TIMBERLINE SOFTWARE CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)

FISCAL YEAR ITEM	1986		1985		1984	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Microcomputer software	\$3,328	46%	\$3,245	30%	\$ 826	8%
Minicomputer hardware and software	1,919	27	6,033	55	8,448	81
Training and support fees	1,528	21	1,355	12	595	6
Other	425	6	280	3	540	5
Total	\$7,200	100%	\$10,913	100%	\$10,409	100%

- Microcomputer products available from Timberline Software include the following:
 - The Medallion® Collection, first introduced in 1984, is a core set of accounting-oriented application software products.
 - The products operate in both single and multi-user environments. Single-user versions operate on IBM, AT&T, and TI microcomputers and compatibles under MS-DOS. Multi-user versions operate under both UNIX and XENIX.
 - The accounting applications provided with the Medallion Collection include General Ledger, Payroll, Accounts Payable, Accounts Receivable, Fixed Assets, Inventory, and Custom Reporter (TS-Report I).
 - Timberline also offers various vertical market products, designed to run with the Medallion Collection, as follows:

- Medallion/Builder, an information management system for the small homebuilder or remodeler.
- Medallion/General for general contractors.
- AEPEX^{T.M.}, a project management and accounting system for architects and engineers.
- TenanTrac^{T.M.}, for residential property managers.
- The Precision Collection^{T.M.}, first introduced in 1987, is a family of estimating products designed for the construction industry. Modules include:
 - Precision Estimating.
 - Precision Estimating Plus.
 - Precision Digitizer (available in November 1987).
 - Precision Bid Analysis.
 - Precision Cut and File.
 - Precision Pricer.
- Minicomputer software products provided by Timberline Software are designed for use on TI Business Systems computers running under DX10 or TI DOS. Products include:
 - Management Accounting Software for Construction (MAC), first installed in May 1980, is a fully integrated, modular, batch or on-line interactive accounting package for the construction industry. The company packages MAC in four versions to meet the needs of general contractors, road and bridge builders, home builders, and specialty contractors.
 - Each system is packaged with a core consisting of job costing, accounts payable, general ledger, purchase order, and report generating modules.
 - Additional modules are available for subcontracting, purchase orders, depreciation, inventory, loan amortization, and spread-sheet capabilities.
 - AccuBid[®], a separate module for estimating, can stand alone but is frequently added to the MAC package. The system accommodates the individual needs of estimators in construction by allowing entry of individual formulas, values, and procedures.
 - Timberline's property management and accounting package (PROMT^{T.M.}) was first installed in 1981 and is designed to provide accounting information to managers of residential and commercial properties.

TIMBERLINE SOFTWARE CORPORATION

- The primary functions of the system are: maintaining tenant information including delinquency rates, dates, and escalators; and property profiles including size, value, potential revenues, taxes, and improvements. The core modules of the package are as follows: property management, multiple ledger, accounts payable, fixed asset accounting and a report generator. The system can accommodate the same supplemental modules as MAC.
- REALTRUST[®] is an adaption of PROMT that includes loan management capabilities. The product is used by real estate divisions within bank trust departments.
- MemberTrac, an enrollment management package jointly developed by Timberline Software and ACRO Life, Inc., is now marketed by ACRO Life.
- Announcements made by Timberline Software during 1986 and 1987 include the following:
 - In January 1986 the company announced it had attained exclusive marketing and distribution rights to Creative Business Systems' ProTrac construction project tracking system for home and commercial builders. ProTrac integrates with the Medallion/Builder product.
 - In February 1986 NYNEX Business Information Systems began distributing the Medallion product line through its NYNEX Business Centers.
 - In April 1987 it was announced that IBM will use Timberline developed software in IBM's Construction Industry Series Solution Pacs[™], targeted to contractors and architects/engineers.
 - In May 1987 the company announced a joint development agreement with Autodesk to interface Timberline Software's Precision Estimating product with Autodesk's AutoCAD product.
 - In May 1987 the company announced that it had been selected as Businessland's key partner for the construction vertical market under Businessland's new Marketing Assistance Program.
 - In June 1987 the company announced it will market the Paydirt earthwork estimating system, developed by Marathon Management Systems, through its nationwide network of authorized resellers.
- Timberline Software offers program changes, enhancements, and support services, through yearly contracts to its minicomputer software users.
 - The support fee allows users access to telephone services for answering system-related questions and for general problem solving.

TIMBERLINE SOFTWARE CORPORATION

- During 1987 the company began offering a maintenance and support program to its microcomputer software users.

INDUSTRY MARKETS

- Timberline Software's products are used by the construction, property management, and architectural/engineering industries.
- Prior to August 1985, Timberline Software products were sold by the company's own sales staff located in regional offices throughout the U.S. and by a network of authorized dealers.
 - In August 1985 the company eliminated its direct sales force and all product distribution is now being handled by value-added dealers and distributors.
 - During 1985 Timberline Software signed two agreements with IBM whereby IBM would market Timberline's Medallion construction products to IBM product centers, its direct sales force, and IBM-authorized dealers.
 - Other distributors include NYNEX and Businessland.

GEOGRAPHIC MARKETS

- Virtually all of Timberline Software's revenue is derived from the U.S. A small percentage is derived from Canada.

COMPUTER HARDWARE AND SOFTWARE

- Timberline Software has various TI and IBM computers installed for research and development and customer support.



FINANCIAL UPDATE TO PROFILE DATED SEPTEMBER 1985

TIMBERLINE SYSTEMS, INC.
9405 S.W. Gemini
Beaverton, OR 97005
(503) 626-6775

John A. Gorman, Chairman and
President
Public Corporation, OTC
Total Employees: 112
Total Revenue, Fiscal Year End
12/31/85: \$10,912,984

TIMBERLINE SYSTEMS, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1985	1984	1983	1982	1981
Revenue	\$ 10,913	\$ 10,409	\$ 9,746	\$ 7,896	\$ 10,151
• Percent increase (decrease) from previous year	5%	7%	23%	(22%)	(30%)
Income (loss) before taxes	\$ (146)	\$ (197)	\$ 795	\$ 433	\$ 195
• Percent increase (decrease) from previous year	(26%)	(125%)	84%	122%	(47%)
Net income (loss)	\$ (71)	\$ (153)	\$ 600	\$ (72)	\$ 272
• Percent increase (decrease) from previous year	(54%)	(126%)	933%	(126%)	5%
Earnings (loss) per share (a)	\$ (0.03)	\$ (0.06)	\$ 0.26(a)	\$ (0.03)(a)	\$ 0.12(a)
• Percent increase (decrease) from previous year	(50%)	(123%)	967%	(125%)	9%

(a) Adjusted to reflect 20-to-1 stock split effective October 1983.

- On March 3, 1986, Timberline announced the sale of its computer hardware division, TIEDEX, to Poorman-Douglas Corporation. Terms of the sale were not disclosed.
- TIEDEX was formed in 1981 to function as the major distributor of Texas Instruments (TI) hardware to Timberline's nationwide dealer network.

- Timberline dealers marketing TI products will obtain software and support from Timberline, with hardware and related support being provided by Poorman-Douglas.
- Timberline has viewed its role with TI as a software supplier rather than that of a VAR and expects the relationship with TI to continue.
- This move completes a process begun during 1985 to put Timberline in the position of a pure software manufacturer with ISV (Independent Software Vendor) ties to a variety of hardware manufacturers.
- In June 1984, Timberline sold its Professional Services Division (PSD), which develops tax return preparation products for the accounting profession. PSD was acquired by a group composed primarily of employees of the division. The venture was unsuccessful on its own and, in satisfaction of secured notes owed, Timberline repossessed the physical assets and software in September 1985. Certain technical employees of the division have been rehired.

SOURCE OF REVENUE

- Approximately 55% of Timberline Systems' 1985 revenue was derived from turnkey systems, 30% from microcomputer applications software products, and 12% from associated training and support fees. Less than 1% of 1985 revenue was derived from standalone hardware sales. The remaining 2% of revenue was derived from other miscellaneous products and services.
- A three-year summary of source of revenue follows:

TIMBERLINE SYSTEMS, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)

ITEM \ FISCAL YEAR	1985	1984	1983
Turnkey systems	\$ 6,032	\$ 8,448	\$ 8,083
• Percent increase (decrease) from previous year	(29%)	5%	29%
Software products	\$ 3,245	\$ 826	\$ 91
• Percent increase from previous year	293%	808%	406%
Training and support	\$ 1,355	\$ 595	\$ 467
• Percent increase (decrease) from previous year	128%	27%	(51%)
Other	\$ 280	\$ 540	\$ 1,105
Total	\$ 10,912	\$ 10,409	\$ 9,746

- Timberline management states that declines in turnkey system sales during 1985 reflected an industry-wide weakness in minicomputer sales that persisted throughout the year.
- Increases in microcomputer software sales were due to the availability throughout the entire year of the company's vertical software packages for contractors and architects/engineers. In addition, Timberline's distribution channels increased substantially during 1985 as a result of its marketing agreement with IBM.
- Training and support revenue increases were due primarily to increased annual maintenance and support fees from new customers.

NEW PRODUCTS AND SERVICES

- During 1985 Timberline made a change in its microcomputer software programming language from Pascal to C.
 - The company's micro-based software is now available for use on multiple-user hardware systems, both on MS-DOS networks and UNIX/XENIX cluster systems.
- In November 1985 Timberline introduced Medallion Bid Analysis, a bid analysis product for contractors.
- In early 1986 the company introduced TenanTrac, a microcomputer-based management system designed primarily for residential property managers. The product is fully integrated and includes Medallion Tenant Management, Accounts Payable, General Ledger, and Report Writer.
- Other significant products developed in 1985 include:
 - Integrated Accounts Receivable and Inventory modules for the Medallion construction software package.
 - A construction billing module that conforms to the billing structure required by the American Institute of Architects (AIA).
 - A report generator that allows users to design custom reports.
 - A data translator that allows data from Timberline software files to be used with currently popular spreadsheet, data base, and word processing products.
 - A depreciation program to manage fixed assets that is fully integrated with Medallion General Ledger.
- In January 1986 Timberline announced it had obtained exclusive marketing and distribution rights to Protrac, Creative Business System, Inc.'s construction tracking software product for home builders.

- The system will integrate with Timberline's Medallion/Builder product.
- All customer support services will be performed by Timberline.

FINANCIAL UPDATE TO PROFILE DATED SEPTEMBER 1985

TIMBERLINE SYSTEMS, INC.
9405 S.W. Gemini
Beaverton, OR 97005
(503) 626-6775

John A. Gorman, Chairman and
President
Public Corporation, OTC
Total Employees: 112
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12/31/85: \$10,912,984

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TIMBERLINE SYSTEMS, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)

ITEM \ FISCAL YEAR	1985	1984	1983
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• Percent increase (decrease) from previous year	128%	27%	(51%)
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Total	\$ 10,912	\$ 10,409	\$ 9,746

- Timberline management states that declines in turnkey system sales during 1985 reflected an industry-wide weakness in minicomputer sales that persisted throughout the year.
- Increases in microcomputer software sales were due to the availability throughout the entire year of the company's vertical software packages for contractors and architects/engineers. In addition, Timberline's distribution channels increased substantially during 1985 as a result of its marketing agreement with IBM.
- Training and support revenue increases were due primarily to increased annual maintenance and support fees from new customers.

NEW PRODUCTS AND SERVICES

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 - The company's micro-based software is now available for use on multiple-user hardware systems, both on MS-DOS networks and UNIX/XENIX cluster systems.
- In November 1985 Timberline introduced Medallion Bid Analysis, a bid analysis product for contractors.
- In early 1986 the company introduced TenanTrac, a microcomputer-based management system designed primarily for residential property managers. The product is fully integrated and includes Medallion Tenant Management, Accounts Payable, General Ledger, and Report Writer.
- Other significant products developed in 1985 include:
 - Integrated Accounts Receivable and Inventory modules for the Medallion construction software package.
 - A construction billing module that conforms to the billing structure required by the American Institute of Architects (AIA).
 - A report generator that allows users to design custom reports.
 - A data translator that allows data from Timberline software files to be used with currently popular spreadsheet, data base, and word processing products.
 - A depreciation program to manage fixed assets that is fully integrated with Medallion General Ledger.
- In January 1986 Timberline announced it had obtained exclusive marketing and distribution rights to Protrac, Creative Business System, Inc.'s construction tracking software product for home builders.

- The system will integrate with Timberline's Medallion/Builder product.
- All customer support services will be performed by Timberline.

COMPANY PROFILE

TIMBERLINE SYSTEMS, INC.

P.O. Box 23579
Portland, OR 97223
(503) 684-3660

John A. Gorman, Chairman
Public Corporation, OTC
Total Employees: 121
Total Revenue, Fiscal Year End
12/31/84: \$10,408,676

THE COMPANY

- Timberline Systems Inc. provides applications software and turnkey systems for minicomputers and microcomputers in three markets: property management, construction, and membership organizations.
 - Prior to its incorporation in 1979, the company operated for approximately eight years as a division of a subsidiary of Orbanco Financial Services, Inc., a bank holding company located in Portland (OR).
- In February 1984 Timberline Systems made an initial public offering of 400,000 shares of common stock, of which 275,000 was sold by the company and 125,000 by selling stockholders. Net proceeds to the company of \$980,000 were used as follows:
 - Approximately \$625,000 was used to prepay the balance owed under the company's purchase agreement with Orbanco. This payment eliminated the company's long-term debt.
 - The remaining \$355,000 was used for working capital.
- 1984 revenue reached \$10.4 million, a 7% increase over 1983 revenue of \$9.7 million. Net losses were \$152,962, compared to net income of \$600,953 in 1983. A five-year financial summary follows:

TIMBERLINE SYSTEMS, INC.

TIMBERLINE SYSTEMS, INC.
FOUR-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	1984	1983	1982	1981
Revenue	\$ 10,409	\$ 9,746	\$ 7,896	\$ 10,151
• Percent increase (decrease) from previous year	7%	23%	(22%)	(30%)
Income (loss) before taxes	\$ (197)	\$ 795	\$ 433	\$ 195
• Percent increase (decrease) from previous year	(125%)	84%	122%	(47%)
Net income (loss)	\$ (153)	\$ 600	\$ (72)	\$ 272
• Percent increase (decrease) from previous year	(126%)	933%	(126%)	5%
Earnings (loss) per share (o)	\$ (0.06)	\$ 0.26(o)	\$ (0.03)(o)	\$ 0.12(o)
• Percent increase (decrease) from previous year	(123%)	967%	(125%)	9%

(o) Adjusted to reflect 20-to-1 stock split effective October 1983.

- To better understand Timberline's fluctuation in revenues, it is helpful to review the company's history for the last five years.
 - From 1979 to 1980, Timberline designed software for use on Burroughs Corporation minicomputers. Timberline sold its software through Burroughs' field sales force and distribution system. During the late 1970s Burroughs began developing its own software and integrated systems and Timberline management believed that the company needed a different hardware vendor if it was to continue to prosper. In 1980, Timberline began developing software for Texas Instruments (TI) Business Systems minicomputers.
 - TI did not offer direct sales support nor did it have a distribution network for Timberline's products. In response to this marketing void, Timberline created its own distribution network and sales force in 1981.

TIMBERLINE SYSTEMS, INC.

- In October 1982, Timberline sold its line of Burroughs' software and associated equipment to Parameter Driven Software, Inc. (PDS) for \$1,052,000 plus approximately \$12,400 of liabilities assumed.
- Hardware sales decreased from \$5.6 million in 1981 to \$3.2 million in 1982 (42%) due to the loss of the Burroughs Customer base and the change from totally direct marketing to a combination of direct marketing and dealer outlets.
- Timberline elected to defer a gain of \$746,398 resulting from the sale because of the minimum amount of consideration received from PDS in 1982. The entire gain was recognized in 1983. Without this gain, net income for 1983 would have been \$68,000 or \$0.03 per share, as compared with the stated net income of \$795,861 or \$0.26 per share.
- A separate subsidiary, "Tiedex" was created to broker TI computers to customers and dealers.
- In March 1982, Timberline signed a marketing agreement with Tymshare, Inc., giving Tymshare the right to sell Timberline's accounting software for the legal and banking industries. This agreement eliminated Timberline's direct sales revenue from those products (which generated over \$1 million in 1981) in return for a royalty income based on 50% of Tymshare's gross margin.
- Royalty income from the Tymshare agreement and the PDS sale was \$246,000 in 1984, \$682,000 in 1983, and \$642,000 in 1982.
- During 1982, Timberline entered the microcomputer software market with the development of the Medallion Collection, a core set of accounting packages which was to be supplemented by industry specific software products for architects and engineers, and for contractors and property managers.
- Net losses in 1984 were due to a three-month delay in the release of Timberline's first industry specific software product in the Medallion series. The delay was due to a management decision to change operating systems from the USCD P-System to MS-DOS in order to gain endorsement by major hardware vendors.
- In 1983 Timberline began marketing a product for membership organizations, MemberTrac®. MemberTrac is a joint development between the company and ACRO Life, Inc. of Seattle.
- In June 1984, Timberline sold its Professional Services Division to a former officer of the company for \$495,128.

TIMBERLINE SYSTEMS, INC.

- This division provided minicomputer-based software for tax processing.
- The new entity is called The Accountants Library of Professional Software, or ALPS.
- In June 1985 Timberline signed an agreement with IBM that allows IBM to market Timberline software through IBM product centers and the IBM direct sales force.
 - Timberline management expects a modest increase in sales and profits in 1985 and a significantly positive impact on revenue and profit in 1986, as a result of this agreement.
- Since 1982, Timberline has spent most of its research and development efforts on its microsoftware.
 - Total product development and support expenses were \$2.0 million in 1982, \$1.9 million in 1983, and \$2.2 million in 1984.
 - Microcomputer software development and production costs rose from \$150,000 in 1982, to \$670,000 in 1983 and \$478,000 in 1984.
- Revenue for the six months ending June 30, 1985 was \$4.9 million, compared to \$4.8 million for the same period in 1984. Net losses were \$285,000 for the period, compared to a net loss of \$292,000 for the same period the previous year.
- As of December 1984, Timberline had 121 employees, segmented as follows:

Marketing/sales	42
Software services	32
Customer support	25
General and administrative	<u>22</u>
	121
- Timberline currently has approximately 100 employees.
- Major turnkey competitors are IBM, Basic Four Systems, and Informatics General.

KEY PRODUCTS AND SERVICES

- Approximately 81% of Timberline Systems 1984 revenue was derived from turnkey systems, 8% from microcomputer applications software products, and 6% from associated training and support fees. Less than 1% of 1984 revenue was derived from standalone hardware sales. The remaining 4% of revenue was derived from other miscellaneous products and services.

TIMBERLINE SYSTEMS, INC.

- A two year summary of source of revenue follows:

TIMBERLINE SYSTEMS, INC. TWO-YEAR SOURCE OF REVENUE SUMMARY (\$ thousands)

	1984	1983
Turnkey systems	\$ 8,448	\$ 8,083
• Percent increase from previous year	5%	29%
Software products	\$ 826	\$ 91
• Percent increase from previous year	808%	406%
Training and support	\$ 595	\$ 467
• Percent increase (decrease) from previous year	27%	(51%)
Other	\$ <u>540</u>	\$ <u>1,105</u>
Total	\$10,409	\$ 9,746

- Microcomputer software sales as a percent of revenue increased from 0.9% in 1983 to nearly 8% in 1984, due to the release of the company's vertical software products for contractors and engineers.
- Minicomputer-based turnkey systems and microcomputer software packages offered by Timberline are shown in the exhibit.
- Timberline markets TI minicomputer-based turnkey systems for the construction and property management markets, and for membership organizations. Software marketed as part of these systems includes the following:
 - Management Accounting Software for Construction (MAC), first installed in May 1980, is a fully integrated, modular, batch or on-line interactive accounting package for the construction industry. The company packages MAC in four versions to meet the needs of general contractors, road and bridge builders, home builders, and specialty contractors. Approximately 56% of Timberline's 1984 turnkey system revenue was derived from the sales of this system.
 - Each system is packaged with a core consisting of job costing, accounts payable, general ledger, purchase order, and report generating modules.
 - Additional modules are available for subcontracting, purchase orders, depreciation, inventory, loan amortization, and spreadsheet capabilities.

EXHIBIT

TIMBERLINE PRODUCTS

PRODUCT	APPLICATION
Minicomputer-based Turnkey Systems	
● MACT TM .	An integrated management accounting system for:
— MAC/General	— General contractors
— MAC/Highway-Heavy	— Road and bridge builders
— MAC/Builder	— Builders and remodelers
— MAC/Specialty	— Subcontractors
● AccuBid [®]	Construction estimator module
● PROMT TM .	An integrated property management accounting system
● REALTRUST [®]	A loan management module
● MemberTrac [®]	Enrollment accounting system
Microcomputer Software	
● Medallion [®]	An integrated accounting system for:
— Medallion/General	— General contractors
— Medallion/Builder	— Builders and remodelers
● AEPEX [®]	An integrated project management and accounting system for engineers

- AccuBid[®], a separate module for estimating, can stand alone but is frequently added to the MAC package. The system accommodates the individual needs of estimators in construction by allowing entry of individual formulas, values, and procedures.
- Timberline's property management and accounting package (PROMTTM) was first installed in 1981 and is designed to provide accounting information to managers of residential and commercial properties.
 - The primary functions of the system are: maintaining tenant information including delinquency rates, dates, and escalators; and property profiles including size, value, potential revenues, taxes, and improvements. The core modules of the package are as follows: property management, multiple ledger, accounts payable, fixed asset accounting and a report generator. The system can accommodate the same supplemental modules as MAC.
 - REALTRUST[®] is an adaptation of PROMT that includes loan management capabilities. The product is used by real estate divisions within bank trust departments.
- Introduced in 1983, MemberTrac[®] is Timberline's product designed for membership organizations such as YMCA's racquet and health clubs, and professional and trade organizations. The package includes core programs for accounts receivable and general ledger, as well as enrollment management, enrollment classification, course enrollment, facilities management, donation enrollment, group enrollment, and testing and measurement. In fiscal 1984, MemberTrac accounted for approximately 2% of turnkey revenues.
- In early 1984 a joint marketing agreement was established with ACRO, the joint developer of MemberTrac, that named ACRO as the party with primary responsibility for marketing MemberTrac. The product will continue to be sold through Timberline sales outlets.
- All Timberline minicomputer software is designed for use on TI Business Systems hardware under the DX10 operating system. The DX10 system can accommodate up to 14 terminals. Timberline is currently developing software that will run under TI DNOS operating system which can accommodate up to 50 terminals.
- TI hardware for all Timberline turnkey systems is maintained by TI.
- The Medallion[®] Collection, introduced in 1984, is a core set of accounting-oriented applications software products for MS-DOS based microcomputers.

TIMBERLINE SYSTEMS, INC.

- The system consists of the following modules:
 - Starter set, which contains the operating system required to run the company's other microcomputer software.
 - General ledger.
 - Payroll.
 - Accounts payable.
 - Accounts receivable.
 - Inventory.
 - TS Report I, for custom reporting.
- During 1984 Timberline released three vertical market products, designed to run with the Medallion Collection, as follows:
 - Medallion® /General and Medallion® /Builder provide integrated accounting packages for general contractors and the small home builder or remodeler. Each package contains a job cost module for general contractors and builders.
 - AEPEX® , is a vertical accounting and project management package for architects and engineers. The package includes the starter set, general ledger, payroll, accounts payable, a custom report writer, and a project planner called architect/engineer.
 - Timberline is planning to introduce a vertical product for property management in 1985.
- Timberline microcomputer software is designed to run on a variety of microcomputers including IBM, TI, AT&T, DEC, and other machines that use the MS-DOS operating system. The company is developing an operating system that is compatible with the UNIX/XENIX programming language.
- Timberline offers clients training and support through yearly contracts. The annual fee pays for program changes, enhancements, and telephone support. The company maintains that its automated, toll-free call system made it possible for 80% of the inquiries to be resolved within two hours in 1984.
- In 1984, a call system was installed in the Boston regional office enabling clients to have access to 12 hours of support each weekday.
- A separate support system is available to micro clients through each of Timberline's regional offices.

INDUSTRY MARKETS

- Timberline Systems' revenue is derived from the construction, property management, and architectural/engineering industries, as well as from bank trusts and membership organizations.

TIMBERLINE SYSTEMS, INC.

GEOGRAPHIC MARKETS

- One hundred percent of Timberline's 1984 revenue was derived from the U.S.
- In August 1985 Timberline restructured its product distribution organization. The company has eliminated its direct sales force, and product distribution is now being handled by a network of approximately 250 authorized dealers and distributors.
 - Regional account managers in Atlanta, Dallas, and Portland (OR) are responsible for supporting dealers and distributors.

COMPUTER HARDWARE AND SOFTWARE

- Timberline Systems has the following hardware installed at its headquarters for research and development.
 - 1 TI DS990/12, DX10.
 - 1 TI 672, DX10.
 - 1 TI 661, DX10.
 - 2 TI DS990/4, DX10/DNOS.



COMPANY PROFILE

TOMINY, INC.
4221 Malsbary Road
Cincinnati, OH 45242
(513) 984-6605

Thomas E. Richley, Chairman
William Martin, President and CEO
Private Corporation
Total Employees: 80
Total Revenue, Fiscal Year End
9/30/84: \$9,000,000*

THE COMPANY

- Tominy, Inc. was incorporated in Ohio in January 1978 to develop and market Data Base-Plus®, an applications development systems software product. The company now also offers applications software products; professional services education, support, and custom applications development; and is a value-added remarketer for IBM.
- Tominy currently has 54 employees segmented as follows:

Marketing/sales	13
Software services/customer support	33
General and administrative	<u>8</u>
	54
- Tominy management believes that no particular vendor offers a comparable product, but primary competition comes from vendors supplying portable application development-type products for specific hardware environments including UFO from Oxford Software, INFORMIX from Relational Data Base Systems, or UNIFY from Uniq Computer Corporation. Other competitive products might include Cincom's Mantis in the mainframe environment, and ISE International's MDBS III and Oracle Corporation's Oracle DBMS in the mini-micro environment.

KEY PRODUCTS AND SERVICES

- Approximately 60% of Tominy's fiscal 1984 revenue was derived from software product sales (90% system software, 10% applications software), 30% from professional services education and training and custom applications development, and 10% from hardware sales (including IBM hardware, CRT's, printers, and tape drives).
- Tominy's primary product is DATA BASE-PLUS®, an applications development system software product designed to provide application portability across mainframe, minicomputer, and microcomputer environments without reprogramming or recompiling.

*INPUT estimate

- The DATA BASE-PLUS family of systems software product components are sold on a modular basis and include the following:
 - The foundation of the system is the Data Base Management System (DBMS) which allows each data element to be stored only once in the system and can be called by any application.
 - The DBMS uses a Data Definition Language (DDL) for defining the file structures.
 - Once the file is described, the DDL Source Statement Processor Utility edits for validity, calculates space requirements, and can create the file in the data base.
 - The Data Manipulation Language (DML) provides access to data base information from the applications program via the "call" facility of the application programming language.
 - The other components of the system require the installation of the DBMS for operation.
 - The Screen Handler provides for the definition and modification of fixed format screens online, outside the application program. Once the screen is designed, the application program requests a read or write by specifying the screen name and the unprotected data area within the program.
 - The Screen Editor (with data dictionary) provides automatic editing and validation of screen files.
 - The Print Handler maintains physical construct data outside the application and controls formatting of the finished output.
 - The Program Generator allows programmers to automatically generate completely tested file maintenance programs.
 - The Query/Report Writer component allows data to be accessed, using English-like commands, to retrieve data and format reports without programming.
 - The DATA BASE-PLUS Programming Language (DB+PL) is a high-level language that integrates the family of products and gives application developers one form of data structure expression.
 - A complete set of utilities is available for maintaining and modifying the data base. These utilities handle such tasks as file delete or transfer, back-up and restore, and system statistics.

- There are approximately 3,500 installations of the DATA BASE-PLUS system which is priced between \$10,000 and \$65,000 depending on hardware environment.
- DATA BASE-PLUS is available for the following hardware environments and operating systems:
 - Mainframes: IBM 43XX, 30XX, 370/XXX Series; and all IBM mainframe operating systems using CICS.
 - Minicomputers: DEC/VAX (VMS), IBM Series/I (CPS, RPS, EDX), IBM System/34 and System/36 (SSP), and Data General Eclipse (AOS/VS).
 - Microcomputers: IBM PC, PC/XT, PC/AT (PC.DOS and XENIX); Altos 586 and CDC114 (XENIX); Onyx (UNIX); HP150, DEC Rainbow, and Wang PCs (MS.DOS); and Data General Desktop (AOS) and Four Phase (UNIX).
- DATE BASE-PLUS interfaces with Tominy's Proprietary Programming Language and most languages that provide a "CALL" facility.
- Application software packages designed for use with DATA BASE-PLUS are marketed as Tominy's INTEGRATED BUSINESS SYSTEMS (IBS) family of business application modules, introduced in June 1982.
- IBS is available for all of the above mentioned hardware and operating systems and incorporates all of the capabilities of DATA BASE-PLUS. Business application modules available include the following:
 - Inventory Control allows for unlimited warehouse locations, pricing options, item cost elements, and substitution item information.
 - Order Entry/Invoicing allows for various levels of price calculation, routing of O/I documents, calculation of shipping information and taxes, and special item instructions.
 - Accounts Receivable provides for open item, balance forward, contract and revolving accounts; generates dunning letters with fixed charges or finance charges; and prepares trial balance and summary credit analysis.
 - Sales Analysis provides for customer purchase and payment history by user defined categories.
 - Accounts Payable offers printed and manual check writing capabilities; cash requirement forecasts; generation of repetitive payments; and cost distribution, aging, and audit limits.

TOMINY, INC.

- General Ledger allows user defined account codes, description codes, and report generation capabilities for up to 99 financial statement report formats.
- System Control is a standard module included with each IBS application module that controls access to work files including logging, security, and workfile manipulation.
- There are approximately 30 installations of IBS, which is available for source license purchase starting at \$10,000 per component module.
- Professional services provided by Tominy include installation and training, education and consulting, and custom applications programming. Technical product "hotline" support is also provided. Recent examples of custom application programming projects include:
 - A parts inventory tracking system implemented for a major, nationwide automobile manufacturer.
 - An engineering and facilities management system for an international engineering and construction management corporation.
- Tominy is an IBM value-added remarketer (VAR) of the Series/1 and value-added dealer of the IBM PC.

INDUSTRY MARKETS

- Tominy's fiscal 1984 revenue was derived from customers across industry sectors including manufacturing, banking and finance, insurance, medical, distribution and services.

GEOGRAPHIC MARKETS

- Approximately 95% of Tominy's fiscal 1984 revenue was derived from the U.S. The remaining 5% was derived from customers in Canada, Europe, and New Zealand.

COMPUTER HARDWARE AND SOFTWARE

- Tominy maintains the following equipment.
 - 1 IBM 4331, DOS/VSE with CICS.
 - 3 IBM Series/1s; CPS, EDX, and RPS.
 - 1 IBM System/34, SSP.
 - 10 IBM PCs, MS.DOS.
 - 1 IBM PC/AT, XENIX.
 - 1 Data General, AOS.
 - 1 Wang Professional, MS.DOS.
 - 1 DEC 1170, VMS.

COMPANY HIGHLIGHT

TIME SHARING RESOURCES, INC.

777 Northern Boulevard
Great Neck, NY 11021
(516) 487-0101

Joseph F. Hughes
Chairman and President
Public Corporation, OTC
Total Employees: 130
Total Revenue, Fiscal Year
End 5/31/81: \$8,211,206

THE COMPANY

- Founded in 1969, Time Sharing Resources, Inc. (TSR) provides timesharing and decision support services to over 350 organizations. Through subsidiary operations, TSR also provides contract programming, consulting, and specialized data processing services.
- Fiscal 1981 revenue increased 61% to \$8.2 million from \$5.1 million during the previous year, while profits rose 44% to \$599,594 or \$0.53 per share. The decline in profits and revenue for fiscal 1980 was attributed to the loss of two major customers.

FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	5/81	5/80	5/79	5/78	5/77
Revenue	\$ 8,211	\$ 5,100	\$ 5,657	\$ 4,638	\$ 2,702
• Percent increase from previous year	61%	(10%)	22%	72%	47%
Income before taxes and extraordinary item	\$ 1,023	\$ 679	\$ 1,609	\$ 1,309	\$ 543
• Percent increase (decrease) from previous year	50%	(58%)	23%	41%	133%
Net income	\$ 600	\$ 416	\$ 850	\$ 746	\$ 288
• Percent increase (decrease) from previous year	44%	(51%)	14%	159%	28%
Earnings per share	\$ 0.53	\$ 0.37	\$ 1.01	\$ 0.92	\$ 0.35
• Percent increase (decrease) from previous year	43%	(63%)	10%	163%	106%

- Revenues for the first six months ended November 30, 1981, were \$5,213,000, up 37% from \$3,788,000 in the previous year. Earnings for the first half year rose 9% to \$466,696 or \$0.41 per share from \$428,706 or \$0.38 per share.
- In 1981, TSR formed TSR Consulting Services, Inc., an 80% owned subsidiary which provides contract programming and consulting services.
- In March 1981, TSR acquired the assets of CDP Marketing Information Corp., a company specializing in bank information processing.
- As of November 1981, TSR's employees were segmented as follows:

- Sales and marketing	45
- Software services/customer support	40
- Computer operations	30
- General and administrative	<u>15</u>
	130

KEY PRODUCTS AND SERVICES

- TSR revenues are derived as follows:

- Interactive processing services	92%	\$7,554,310
- Professional services	<u>8</u>	<u>656,896</u>
	100%	\$8,211,206
- Software on TSR's network is concentrated on products for decision-support services, data base management, and financial systems. All TSR products contain flexible report writing and graphic display capabilities and many have built-in sensitivity analysis and "what if" modeling features.
- TSR applications are used for financial management, corporate and strategic planning, marketing and sales, engineering and operations, and administration. A profile of applications available on the network is presented in the exhibit.
- Proprietary applications on the network include:
 - SHELL, a data base management system.
 - INSIGHT, for financial analysis.
 - QED, a forecasting and modeling system.
- In fiscal 1980, TSR introduced its VM/CMS service which accounts for about 9% of its timesharing revenues. The TOTAL/APL service is being upgraded and enhanced to operate under the VM/CMS operating system.
- In 1980, TSR introduced Fixed Price Timesharing (FPT). The service is IBM compatible, configured to a client's requirements, on-line and interactive, and

EXHIBIT

TSR NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> ● Operating Environment <ul style="list-style-type: none"> — IBM 370/158 — Four-Phase 311 — VM/CMS — TOTAL/APL ● Programming Languages Supported <ul style="list-style-type: none"> — APL — BASIC — FORTRAN — COBOL — APL/1 — TOTAL/APL — BAL ● Data Management Software <ul style="list-style-type: none"> — Shell — RAMIS II ● Data Bases Available <ul style="list-style-type: none"> — Consumer and Producer <ul style="list-style-type: none"> • PPI/CPI — Financial <ul style="list-style-type: none"> • Compustat II Financial • Compustat II Line of Business • FHLBB — Economic <ul style="list-style-type: none"> • Citibase — Securities and Investments <ul style="list-style-type: none"> • Muller Data — Banking <ul style="list-style-type: none"> • Decision Research Sciences • FHLBB — Insurance <ul style="list-style-type: none"> • A.M. Best 	<ul style="list-style-type: none"> ● Graphics <ul style="list-style-type: none"> — XIBIT — TSR Graph — SAS Graph ● Statistical/Math <ul style="list-style-type: none"> — SAS — MATHPAC ● Financial <ul style="list-style-type: none"> — INSIGHT — QED — COMPASS ● Other <ul style="list-style-type: none"> — Electronic Mail — Project Planning and Control — Fleet Cost Control — Script — Document

offers a fixed monthly rate guaranteed over a flexible fixed time period. The FPT user is provided a dedicated full-time computer, guaranteed backup, and full facilities management services all provided from TSR's computer center.

- Specialized services to banks offered by CDP Marketing are consolidated account information, comprehensive customer data, financial and industrial analyses, and a business development system.

INDUSTRY MARKETS

- TSR has established a client base which covers a broad spectrum of commercial, financial, and government organizations. This base includes Fortune 1000 companies, oil and gas exploration companies, and clients from the banking and finance, manufacturing, utilities, and insurance industries.

GEOGRAPHIC MARKETS

- TSR derives 100% of its revenue from the United States. Offices are maintained in New York, Paramus, Philadelphia, Stamford, Miami, Dallas, Houston, and Los Angeles.

COMPUTER HARDWARE AND SOFTWARE

- Access to TSR's network is through TSRNET, a proprietary communications network and Tymnet. Interactive and remote batch processing are offered.
- At its newly completed computer center in Hauppauge, Long Island, TSR has installed:
 - 4 IBM 370/158s.
 - 4 Four-Phase 311s.
 - VM/CMS.
 - TOTAL/APL.

COMPANY HIGHLIGHT

Reynard "Begu" Suedenborg
Marketing Manager
proposed 1/81

TIMESHARED BUSINESS SYSTEMS, INC.

3031 Tisch Way, Suite 301
San Jose, CA 95128
(408) 246-6565

Joanne Malone, President

Private

Total employees: 10

Computer Services revenues, fiscal
year end 2/28/78: \$580,000*

THE COMPANY

- Timeshared Business Systems (TBS) was founded in 1971 as a sole proprietorship to provide professional EDP services and software products. Since its incorporation in 1974, it has added remote computing services, a turnkey motor freight system known as EXPEDITOR, and sale and rental of computer terminals for its 300 clients. The IBM System 32, System 3, and 370 Series computers are TBS' prime competition for sales of its motor freight turnkey system.
- Computer services in fiscal 1978 increased approximately 73% over fiscal 1977 revenues of \$336,000*.

KEY PRODUCTS AND SERVICES

- In fiscal 1978, computer services revenues were distributed as follows:

- Remote computing	62%
General business	34%
Utility	22%
Specialty	6%
- Professional services	25
- Turnkey systems	13
	<hr/>
	100%

- The company first offered remote computing services in 1973. They now offer general business, utility, and specialty processing services as shown below:
 - General business services. Called the Basic Library Applications Package, BLAP includes order entry, payroll, accounts payable, general ledger, accounts receivable, cash disbursement, labor distribution, and inventory control.
 - Utility services include text editing and a management data retrieval system.
 - Specialty applications for motor freight carriers include generalized freight billing and revenue accounting. Vehicle maintenance and mileage reporting services are expected to be offered during calendar 1978.

* INPUT estimate

May 1978

COMPANY HIGHLIGHT/TIMESHARED BUSINESS SYSTEMS, INC.

- Beginning during its second quarter 1978, TBS plans to offer a new package price structure for its general business processing services - BLAP. BLAP users will have a choice of either traditional charges (connect time, terminal rental, storage charges, processing charges, etc.) or a flat monthly "package" fee.
 - The package includes connect time; 30 cps or 120 cps terminal rental, storage costs, printing charges, and line charges (user pays local dial-up charges to a TBS leased line). The flat fee is based on estimated usage blocks of three, five, or ten hours per day.
 - The special price contract carries a month-to-month commitment and is available only for BLAP, an application where the file size is controllable.
- Since 1971, TBS' professional services group has provided contract programming for accounting and production control, and systems design and implementation.
- In late 1977, TBS introduced EXPEDITOR, a turnkey system for motor freight carriers. It includes a Basic Timesharing, Inc. minicomputer, DECWRITER terminals, systems and applications software, training, and support.
 - With 60 systems installed, EXPEDITOR is the company's fastest growth area.
 - The freight billing system, a major component of EXPEDITOR, was completed in 1977 after a five year effort.
 - New services to be offered during 1978 as part of EXPEDITOR: vehicle maintenance and mileage reporting.
 - Management has plans to expand the system for use by air forwarding companies.
 - TBS maintains the terminals and the software. Basic Timesharing, Inc. maintains its minis.
 - Management claims EXPEDITOR is configured to facilitate its expansion as user needs expand or change.
- TBS will customize its processing services and turnkey systems to meet customer requirements.
- In late 1974, the company began to OEM, rent, and maintain computer terminals. These revenues are not included in the estimated computer services revenues listed on page 1. The terminals are non-programmable keyboard type and CRTs manufactured by various firms and available with EXPEDITOR and to the general public.

COMPANY HIGHLIGHT/TIMESHARED BUSINESS SYSTEMS, INC.

APPLICATIONS Approximately 55% of processing revenues are generated by general business services, 35% by utility services, and 10% by specialty services.

INDUSTRY MARKET An approximate distribution of TBS computer services revenues by industry is shown below:

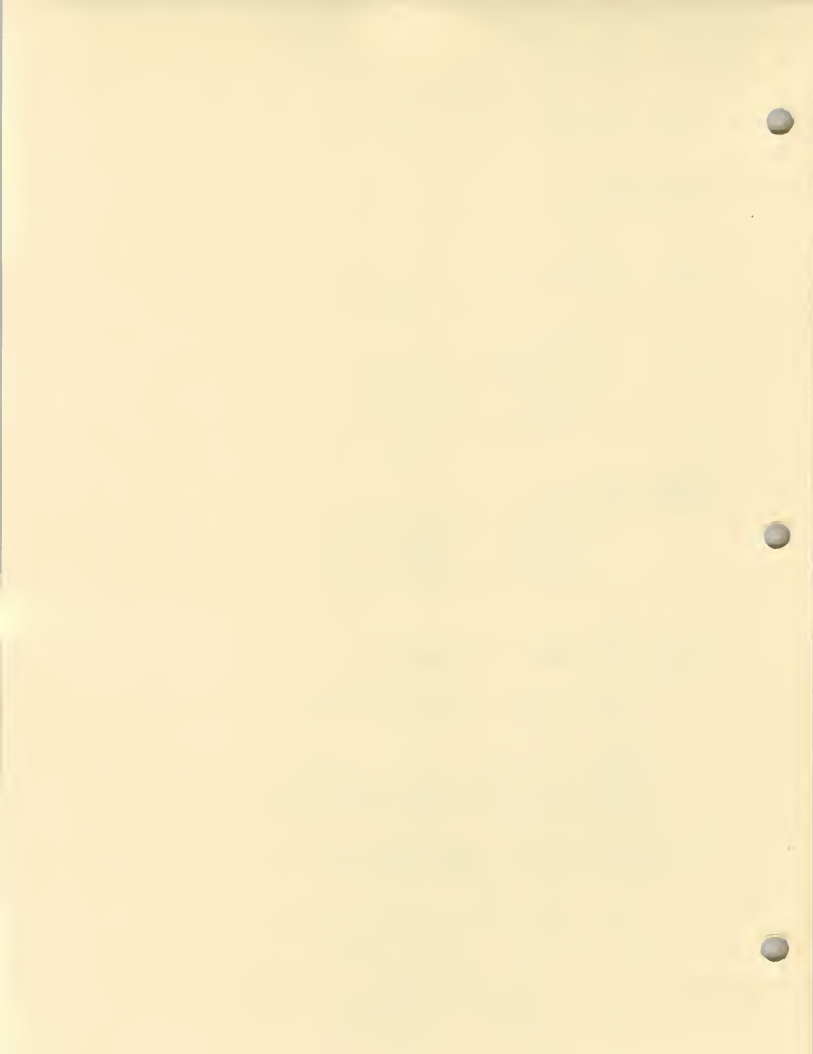
	<u>1977</u>	<u>1978</u>
Distribution-wholesale	70%	37%
Transportation	10%	50%
All other industries:	20%	13%
Discrete & process manufacturing		
Services		
Construction		
	<u>100%</u>	<u>100%</u>

GEOGRAPHIC MARKETS

- Approximately 85% of revenues are generated by clients in the San Francisco Bay Area. Remaining revenues are produced by customers in Southern California, Chicago, Seattle, and the East Coast.
- All 320 customers are served by the San Jose office. There are no other offices.

COMPUTER HARDWARE AND SOFTWARE

- TBS uses one Basic Timesharing, Inc. 4000/25 for all interactive remote computing applications. There is no link between this processing services computer and the EXPEDITOR Systems.
- Approximately 300 terminals are on-site at client locations. Although they are principally DECWRITER terminals currently, TBS equipment is compatible with other non-intelligent hardcopy and ASCII code CRT terminals. The company will modify its software and hardware configuration to meet client compatibility needs.
- It offers 110 baud to 1200 baud leased lines for the hardcopy terminals and 110 baud to 19.2 thousand baud leased lines for CRTs.



COMPANY PROFILE

TITAN SYSTEMS

9191 Towne Centre Drive
La Jolla Gateway
Suite 600
San Diego, CA 92122-9921
(619) 453-9500

John R. McDougall, President
Operating Group of The Titan
Corporation
Total Revenue, Fiscal Year End
12/31/87: \$50,797,000

The Company

Titan Systems provides advanced technology system design and development and system deployment, operational and test support professional services in the area of command, control, communications, and intelligence (C³I), space and weapon systems, and artificial intelligence for federal government agencies and their prime contractors.

- Titan Systems, founded in 1981, was reincorporated in 1984 as Titan Systems International, Inc. (TSI) and operated as a private company until May 1985.
- Effective May 30, 1985, TSI merged with Electronic Memories & Magnetics Corporation (EMM). EMM issued 2.1 shares of its common stock for each share of TSI common stock. The merger was accounted for as a pooling of interests, and the company name was changed from EMM to The Titan Corporation.
- Titan Systems is now an operating group of The Titan Corporation.
- In addition to the professional services provided by Titan Systems, The Titan Corporation, with total 1987 revenue of \$123.9 million, also provides militarized computers, electronic subsystems, and meteor burst communications equipment (through Titan Electronics and Materials group) and conducts research and development in electro-optics, pulsed power, computational fluid dynamics, and applied mechanics (through Titan Technologies group).

Titan Systems' 1987 revenue reached \$50.8 million, a 29% increase over 1986 revenue of \$39.5 million. A four-year financial summary follows:

**TITAN SYSTEMS
FOUR-YEAR FINANCIAL SUMMARY
(\$ thousands)**

ITEM	FISCAL YEAR			
	1987	1986	1985	1984
Revenue	\$50,797	\$39,499	\$32,193	\$22,737
• Percent increase from previous year	29%	23%	42%	N/A
Operating income	\$3,489	\$4,215	\$2,796	\$2,048
• Percent increase (decrease) from previous year	(17%)	51%	37%	N/A

Revenue growth in 1987 was attributed to increased marketing efforts and the acquisition of Advanced Digital Systems, Inc. (ADS).

- ADS was acquired by Titan Corporation in July 1987 for approximately \$3.9 million. ADS, a provider of system engineering and software development services for Navy satellite communications data transfer systems, had revenue of \$9 million for 1986.

Decreases in operating profits during 1987 were attributed to a change in business mix to more subcontract work and increased costs of revenues.

Titan Systems is organized into the following units:

- Information services units include:
 - California Research & Technology, Inc. (CRT) and its affiliate, California Computing resources, Inc. (CCRI) were acquired by Titan Corporation in May 1986.
 - CRT develops large computer codes for modeling of scientific and engineering problems in the areas of explosive processes, nuclear effects, structured dynamics in severe environments, and high velocity impacts for federal government agencies and aerospace companies.
 - CCRI operates a computer service bureau.
 - CRT and CCRI have approximately 90 employees at

offices in Chatsworth and Pleasanton (CA) and Albuquerque (NM).

- Computing Applications Software Technology, Inc. (CAST), an 87.5% owned subsidiary, specializes in systems design, analysis and software development for real-time applications in the navigation, communications, and radar systems areas.
- Defense Systems Corporation, acquired by Titan Corporation in November 1986, specializes in avionics and applications of artificial intelligence to avionics systems.
- Advanced Digital Systems (ADS), acquired in July 1987 specializes in satellite communications.
- Titan Applications Division, formed in early 1988, consolidates the company's tactical command and control business.
- Non-information services subsidiaries include:
 - Spectron Development Laboratories, headquartered in Costa Mesa (CA), was acquired in May 1986. Spectron is involved in laser technology and applied optics.
 - Beta Development Corporation, headquartered in Dublin (Ca), produces laser components and power systems.

Major professional services competitors include BDM International, Logicon, and Science Applications International Corporation.

Key Products and Services

Titan Systems provides a range of professional services as follows:

- C³I Systems. Titan Systems provides C³I systems design and integration services for the Department of Defense. Project examples include the following:
 - In July 1987, Titan Systems was awarded a \$6.4 million contract from Martin Marietta Energy Systems in support of the U.S. Air Force's Worldwide Military Command and Control System. Titan Systems is assisting in the modernization, integration, and implementation of Air Force standard and command-unique command and control systems, including providing Wing Commanders with accurate, near-real time automated flow command and

control information.

- Under various subcontracts, Titan Systems is providing architecture development design, software, and integration services for the Army's Worldwide Military Command and Control System.
- Titan Systems is developing command center designs that improve efficiency of operations through modernization of hardware, software, audio-visual, and communications systems for the Air Force Command Center.
- Under contract to the U.S. Army's Training and Doctrine Command, Titan Systems has developed an air/land battle management system that augments staff expertise with simulation models, knowledge-based systems, and decision aids.
- Titan Systems provides technical C³I systems support to various programs for national security emergency preparedness.
- Titan Systems designed, developed, and integrated three of the four subsystems for the National Crisis Coordination Center: telecommunications, electronic graphics, and audio-visual/video. The Crisis Center was integrated and tested in Titan's Vienna (VA) facility and installed in the Pentagon in early 1988.
- Defense/Space Systems. Titan Systems provides space systems design and development services, especially in the fields of surveillance, warning, and battle management. The company also has expertise in image processing, multi-level communications networking, and hybrid sensor/platform data fusion. Project examples include the following:
 - Titan Systems is a key member of the Teledyne Brown, Army System Engineering and Technical Assistance Contract (SETAC) team. Principal areas of responsibility include command, control, and communications (C³), battle management, cost analysis, and system effectiveness assessment.
 - Titan Systems is developing fault tolerant programming software for the Strategic Defense Initiative/Boost Surveillance and Tracking System. This software identifies and corrects faults in both hardware and software subsystems.

- Under several contracts from the Air Force Space Command, Titan Systems develops and evaluates algorithms, implements operational software, and maintains software modules for early warning and attack assessment programs.
- Titan Systems is support contractor to the U.S. Air Force Ballistic Missile Office for enhancing and maintaining the OASIS wargaming computer model.
- Under contract to U.S. Air Force/Rome Air Development Center, Titan Systems is developing system concepts for use in the next generation ECLIPSE avionics logistics system.
- Expert Systems Software. Titan Systems provides expert system and advanced software development services, including programs for navigation, surveillance, secure communications, radar signal processing, C³I systems, and large-scale computer simulations. Custom software development is provided on a fixed-price basis.
 - Titan's knowledge-based software development environment is being used to simulate the functions of an autonomous airborne platform. Current simulations include: Scene Understanding, Situation Assessment, Tactical Response Logic, Mission Planning, Systems Status/Self-Health Diagnosis, and Vehicle Management/Auto Pilot Actuation.
 - Titan is developing a knowledge base for the Situation Assessment Module of Lockheed Corporation's Pilot Associate Program.
 - Under subcontracts to various aerospace companies, Titan develops and installs proprietary Adaptive Maneuvering Logic(AMLTM) software in manned, real-time air combat maneuvering flight simulators.
 - Under several Department of Defense contracts, Titan has developed generic software modules for autonomous vehicle operation, including mission control executive, tactics response logic, scene awareness, automatic target recognition, and situation assessment.
 - The Titan-developed Image Understanding System is designed for automatic target detection. Used together with Titan's Computer Understandable Terrain Model (CUTMTM), it permits automatic removal of false targets and specification of infeasible targeting locations.

- Titan is developing embedded software for the Marine Corps Engineers School and Motor Transport School Universal Maintenance Training System program, incorporating a Titan training system that extends instruction in military trouble-shooting and maintenance procedures.
- Under contract to AMOCO Development Research, Titan has developed knowledge-based expert system software for use in oil and gas drilling mud control.
- Under contract to the Strategic Air Command, Titan developed an in-flight battle management system.
- Computer Engineering/Modeling. Titan (through its California Research & Technology subsidiary) develops large-scale computer simulations to study various problems and visualize complex processes, including codes for anti-submarine warfare, undersea and air vehicle trajectory analysis, hypervelocity impact studies, atmospheric environmental pollutant studies, the mechanical effects of nuclear weapons, response of structures to severe dynamic loading, and the development of advanced ordnance devices. In addition, Titan develops mission-specific computer infrastructures and designs and integrates computer hardware systems.
 - Under a subcontract to the U.S. government, Titan is helping to develop the design for advanced spacecraft, associated equipment and systems, and the ground-based communications and control segment of the country's first large spaceborne laser experiment.
 - Titan is responsible for the installation, integration, test, and acceptance of VAX 8000-series systems at several government sites.
- Communications. Titan provides communications systems support, from proof-of-concept experiments, project design and development, through the manufacture and installation of hardware, in areas ranging from data gathering to worldwide military communications. The company has expertise in blue-green laser technology for underwater communications, airborne over-the-horizon laser technology, and fourth generation meteor burst communications technology.
 - Under contract to the Navy, Titan is performing full-scale engineering development of TADIXS, a system that provides broadcast data link traffic capability on a one-way transmission path from shore sites to fleet-based Navy Cruise

Missile Combat Support Systems.

- Titan is developing digital data network connectivity capabilities for TADIXS Gateway Terminals using the ADA language, as well as a new communications networking protocol to maximize use of satellite channels.
- Titan is developing verification and validation support for the HAVE QUICK II anti-jam communications program.
- Titan designed, developed, and integrated the Navy's first ADA software-based digital communications subsystem, the Combat Direction Finding Tactical Intelligence Terminal Rugged Combat Support Disk.
- Titan has developed a new PC-based software product for the Navy that automates and simplifies Department of Defense formatted message generation, communication, and broadcast.

Titan Systems, through California Computing Resources, Inc. (CCRI), provides utility processing services from a data center in Chatsworth (CA). Applications are available for accounting, word processing, mailing lists, engineering and science, and graphics.

- Titan is providing processing services for a California Coastal Communications study of the environmental impact on ocean marine life of the San Onofre nuclear reactor.

Industry Markets

Virtually 100% of Titan Systems' professional services revenue was derived from the federal government, consisting of sales as a subcontractor as well as direct sales.

Government clients include the U.S. Army, Air Force, Navy, and other Department of Defense agencies, including the Defense Nuclear Agency, Defense Communications Agency, Defense Advanced Research Projects Agency, and the Federal Emergency Management Agency.

**Geographic
Markets**

One hundred percent of Titan Systems' professional services revenue is derived from the U.S.

Titan Systems has U.S. branch offices in Albuquerque (NM); Bellevue (NE); Chatsworth, Gardena, and Mountain View (CA); Colorado Springs (CO); Huntsville and Montgomery (AL); Princeton (NJ); Vienna (VA); and Westborough and Woburn (MA).

The company also has a branch office in Heidelberg, West Germany in support of U.S. government projects performed in Europe.

**Computer
Hardware and
Software**

Titan Systems has the following computers installed at its San Diego and Vienna offices in support of its professional services activities:

- San Diego.
 - 1 DEC VAX-11/750, VMS, ULTRIX.
 - 1 Convergent Technologies MegaFrame, UNIX.
- Vienna.
 - 1 DEC 8200, VMS.

Processing services provided by CCRI are supported by three DEC VAX-11/780s and one ELXSI 6400 located in Chatsworth (CA). Clients can access the data center via Telenet or direct dial.

COMPANY PROFILE

TITAN SYSTEMS, INC.
9191 Towne Centre Drive
La Jolla Gateway
Suite 600
San Diego, CA 92122
(619) 453-9500

Albert E. Knauf Jr., President
Wholly Owned Subsidiary of The
Titan Corporation
Total Employees: 700 (12/86)
Total Revenue, Fiscal Year End
12/31/85: \$34,369,000

THE COMPANY

- Titan Systems, Inc. provides a range of systems engineering professional services primarily in the area of command, control, communications, and intelligence (C³I), space, and weapon systems for federal government agencies and their prime contractors.
 - Titan Systems, founded in 1981, was reincorporated in 1984 as Titan Systems International, Inc. (TSI) and operated as a private company until May 1985.
 - Effective May 30, 1985, TSI merged with Electronic Memories & Magnetics Corporation (EMM). EMM issued 2.1 shares of its common stock for each share of TSI common stock. The merger was accounted for as a pooling of interests, and the company name was changed from EMM to The Titan Corporation.
 - Titan Systems now operates as a wholly owned subsidiary of The Titan Corporation.
 - In addition to the professional services provided by Titan Systems, Titan Corporation, with total 1985 revenue of \$97.9 million, also manufactures and sells memory and computer products, ferrite powders, stainless steel castings, and uninterruptible power systems for power isolation regulation and conversion.
- As a result of the merger with EMM, beginning in 1985 Titan Systems' fiscal year end has been changed from October to coincide with the calendar year.
- Titan Systems' calendar 1985 revenue reached \$34.4 million, compared to fiscal 1984 revenue of \$24.2 million. A four-year financial summary follows:

TITAN SYSTEMS, INC.
FOUR-YEAR FINANCIAL SUMMARY
(\$ thousands)

ITEM \ FISCAL YEAR	12/85 (a)	10/84	10/83	10/82
Revenue	\$ 34,369	\$ 24,229	\$ 13,497	\$ 5,404
• Percent increase from previous year	42%	80%	150%	N/A
Income before taxes	\$ 2,946	\$ 2,295	\$ 1,439	\$ 538
• Percent increase from previous year	28%	59%	167%	N/A
Net income	\$ 2,746	\$ 1,215	\$ 782	\$ 295
• Percent increase from previous year	226%	55%	165%	N/A
Earnings per share	(b)	\$ 0.54	\$ 0.42	\$ 0.20
• Percent increase from previous year	-	29%	110%	N/A

(a) Includes 12 months results for the period January 1, 1985 through December 31, 1985

(b) Computed on a corporate basis only (Titan Corporation)

- Titan Systems has one wholly owned computer services subsidiary and three noncomputer services subsidiaries as follows:
 - California Research & Technology, Inc. (CRT) and its affiliate, California Computing Resources, Inc. (CCRI) were acquired by Titan Corporation in May 1986.
 - CRT develops large computer codes for modeling of scientific and engineering problems in the areas of explosive processes, nuclear effects, structural dynamics in severe environments, and high velocity impacts for federal government agencies and aerospace companies.
 - CCRI operates a computer service bureau.
 - CRT and CCRI have approximately 90 employees at offices in Chatsworth and Pleasanton (CA) and Albuquerque (NM).
 - Spectron Development Laboratories, headquartered in Costa Mesa (CA), was acquired by Titan Corporation in May 1986. Spectron is involved in laser technology and applied optics.

TITAN SYSTEMS, INC.

- Aeronautical Associates of Princeton, acquired by Titan Corporation in April 1986, specializes in applied mechanics (armor/anti-armor technology).
- Beta Development Corporation, headquartered in Dublin (CA), produces laser components and power systems.
- As of October 1985 Titan Systems had approximately 450 employees. The company currently has 700 employees, of which approximately 500 are involved in systems engineering/professional services activities.
- Major professional services competitors include BDM International, Logicon, and Science Applications International Corporation.

KEY PRODUCTS AND SERVICES

- INPUT estimates approximately 83% of Titan Systems' total 1985 revenue was derived from professional services. The remaining 17% of revenue was derived from noncomputer services, including specialized laser products. A further breakdown of source of revenue follows:

ITEM \ FISCAL YEAR	12/85	10/84	10/83
Professional Services			
- System development and integration	80%	74%	65%
- System analysis	3	8	16
Other			
- Advanced technology	12	12	12
- Specialized products	<u>5</u>	<u>6</u>	<u>7</u>
Total	100%	100%	100%

- System development and integration revenue is derived from system and related software design and development, test and evaluation, operational exercises, and personnel training support to government and industry, particularly for C³I, space, and weapon systems.
 - Specific capabilities in system development and integration include the following:
 - Requirements analysis.
 - Concept development.
 - Design, development, and testing.
 - Hardware design tradeoffs.
 - Software design and development.
 - Hardware/software/subsystem integration.

- . Test and evaluation.
- . Life cycle support, training, and operational exercises.
- Titan Systems' software development projects involve large data base management, distributed networking, discrete event simulation and modeling, very high-speed integrated circuits, operating systems and test bed design, software verification and validation, computer security, message handling, man-machine interface, and workstation design. The following are some examples of recent Titan software projects:
 - . Detailed functional simulation of the command, control, and communications (C³) network for the Army Short Range Air Defense (SHORAD) system. Included is data processing at C³ nodes, communication networks, communications protocols, and command doctrine.
 - . Definition of command and control software requirements, site and intersite architectures, and specifications for all Army WIS (WWMCCS Information System) sites. Titan is also supporting implementation and integration of the command and control software architecture for the Air Force WIS program.
 - . Development of knowledge data bases and expert systems for intelligently interactive air-to-air and air-to-ground combat situations. Efforts are concentrated on aiding intelligence analysts to process massive amounts of data so that they may test alternate military solutions and arrive at appropriate decisions within the air-land battle environment.
 - . Operation of a computational center which includes developing software for multiple users for retrieval and analysis of oceanographic data. This information is used to assess the environmental impact of the San Onofre Nuclear Generating Station.
 - . Definition of software standards for the Army's Strategic Defense Initiative (SDI) components and requirements for the design of a real time driver. This driver will be used to test data processing subsystems by simulating radar and realistic full-scale attacks.
 - . System engineering and independent verification and validation for the Inter-Service/Agency Automated Message Processing Exchange (AMPE), a major secure communications system.
 - . Design of the data processing subsystem for the Advanced Tactical Radar to predict performance under stress with single and netted radars. The project involves tasks that range from conceptualization through development of an advanced 32-bit

microprocessor network, a sophisticated real time driver, and a high fidelity data processing simulator.

- Other examples of recent projects in the areas of C³I, space, and defense systems include the following:
 - In July 1986 Titan Systems was awarded a \$3 million subcontract by System Planning Corporation to participate in SDI's Technical Counters and Soviet Response (TCRC) program. Under the contract, which was awarded for one base year plus four option years, Titan Systems has been appointed the leader of the Space-Based Interceptor Technical Red Team. They will manage and participate in the analysis of space sensors and weapons countermeasures in support of the SDIO Countermeasures Office.
 - In February 1986 Titan Systems was awarded a \$1.4 million contract by the Defense Communications Agency (DCA) for support to strategic C³ planning in the area of requirements analysis, conceptual design, and preliminary engineering related to major defense communications systems, including those for major commands and SDI.
 - In January 1986 Titan Systems was awarded a \$926,257 contract by the Air Force Ballistic Missile Office (BMO) to provide support for the maintenance and upgrading of OASIS and FTRPRNT. These software systems are used for the study and preparation of U.S. strategic missile employment plans. The Titan Systems team supporting this work was responsible for the original development of these programs in the early 1970s.
 - Titan Systems recently designed, integrated, and delivered several secure full-motion video-teleconferencing systems. These typically provide both full motion and freeze-frame video, a high quality audio system and computer-to-computer digital communications. Communications are digitized and compressed before encryption and subsequent transmission via commercial satellites. Capabilities of this nature are used in real time analysis of crisis situations and for the support of operational planning.
 - Titan Systems supports major aerospace contractors in the design and development of advanced satellite communication and sensor systems. Recent involvements include the Global Positioning Satellite, the Space Surveillance and Tracking System, the Nuclear Detection System, and advanced communication satellite programs, including a space laser communications concept.

- Efforts directly for the Air Force Space Command involve the development of improved algorithms for processing tactical warning sensor data and system engineering support for satellite tracking systems.
 - Titan Systems performs design and development projects on a number of U.S. weapon programs such as the Small Missile, the Strategic Bomber, and SDI.
 - SDI efforts include support of the Army Strategic Defense Command and its System Engineering and Technical Assistance Contractor in the design, evaluation, and technical analysis for the next generation of ballistic missile defense sensors, communications, and weapons.
 - SDI work for the Rome Air Development Center will provide enhanced technologies for weapon system discrimination and tracking using Titan developed signature processing.
 - Other Titan systems SDI activities support the Air Force Weapons Laboratory, Air Force and Navy Space Command, and National Laboratories.
- System analysis services are provided by Titan Systems to support the federal government's planning and budgeting process for military systems.
 - Titan assists the Department of Defense by providing, based on government requirements, alternative system architectures and associated life cycle cost estimates.
 - In this area, Titan Systems evaluates the national policy implications of future military systems, develops alternative architectures and system concepts for advanced systems, performs analyses to determine whether existing and proposed systems meet mission requirements and design specification, and prepares economic and life cycle cost estimates.
 - Titan Systems designs and develops computer simulations for complex military systems to aid system analysts in performing their tasks.
 - Titan Systems' advanced technology services encompass applied research and engineering for lasers, electro-optics, space power, nuclear weapon effects, aerophysics, fluid dynamics, materials research, design and testing, and artificial intelligence.
 - Currently, Titan Systems is developing blue-green laser communication technology for the Navy and DARPA.
 - Programs in support of the Strategic Defense Initiative (SDI) include performance and device modeling and technology assessments of

ground- and space-based chemical, free electron, excimer, and explosively driven lasers.

- Detailed nuclear survivability assessments are being performed for ground-based SDI elements.
- Computer simulations are being conducted for the Air Force to determine hardware and software requirements to test space-based laser fire control concepts. Additional work on SDI for directed and kinetic energy weapon concepts includes modeling and simulation of particle beams and microwaves, design of advanced electromagnetic guns, and studies of innovative plasma projectiles.
- Advanced sensor technology development for surveillance applications, ranging from basic phenomenology through system design and testing, is being conducted for the Navy and Air Force.
- As a result of the acquisition of California Research & Technology (CRT) and its affiliate, California Computing Resources, Inc. (CCRI), Titan Systems also provides the following services:
 - CRT develops large computer codes for modeling of scientific and engineering problems in the areas of explosive processes, nuclear effects, structural dynamics in severe environments, and high velocity impacts for federal government agencies and aerospace companies.
 - CCRI provides utility (timesharing) processing services from its data center in Chatsworth (CA). Applications are available for accounting, word processing, mailing lists, engineering and science, and graphics.

INDUSTRY MARKETS

- Virtually 100% of Titan Systems' professional services revenue was derived from the federal government, consisting of sales as a subcontractor as well as direct sales.
- Government clients include the U.S. Army, Air Force, Navy, and other Department of Defense agencies, including the Defense Nuclear Agency, Defense Communications Agency, Defense Advanced Research Projects Agency, and the Federal Emergency Management Agency.

GEOGRAPHIC MARKETS

- One hundred percent of Titan Systems' professional services revenue is derived from the U.S.
- Titan Systems has U.S. branch offices in Albuquerque; Bellevue (NE); Chatsworth, Gardena, and Mountain View (CA); Colorado Springs; Huntsville and Montgomery (AL); Princeton; Vienna (VA); and Westborough and Woburn (MA).

- The company also has a branch office in Heidelberg, West Germany in support of U.S. government projects performed in Europe.

COMPUTER HARDWARE AND SOFTWARE

- Titan Systems has the following computers installed at its San Diego and Vienna offices in support of its professional services activities:
 - San Diego.
 - 1 DEC VAX-11/750, VMS, ULTRIX.
 - 1 Convergent Technologies MegaFrame, UNIX.
 - Vienna.
 - 1 DEC 8200, VMS.
- The San Diego office has recently installed an IBM 4341 for internal purposes.
- Processing services provided by CCRI are supported by three DEC VAX-11/780s and one ELXSI 6400 located in Chatsworth (CA). Clients can access the data center via Telenet or direct dial.

COMPANY PROFILE

TOMINY INC.

4221 Malsbary Road
Cincinnati, OH 45242-0990
(513) 984-6605

Thomas E. Richley, Chairman
William Martin, President and CEO
Private Corporation
Total Employees: 12
Total Revenue, Fiscal Year End
9/30/88: \$2,000,000

The Company

Tominy Inc., founded in 1978, develops, markets, and supports application development systems software and application software products, and provides education and training and custom application development professional services.

Effective July 1, 1988, Tominy became a registered reseller for the SCO (Santa Cruz Operations) XENIX operating system.

Tominy management has stated that, although the company's revenue and number of employees has decreased significantly since fiscal 1984, the company is profitable. The emphasis will continue to be on controlled growth with increased profitability.

Tominy's primary competitor is Oracle Corporation and its ORACLE software product.

Key Products and Services

Approximately 50% of Tominy's fiscal 1988 revenue was derived from software products sales (40% from license fees and 10% from maintenance) and 50% from professional services activities, including education and training, custom application development, and consulting.

Tominy's software development tools are portable to over 20 different computer and operating system platforms. The products are currently available for IBM PC, System/36, Series/1, 9370, 43XX, and 30XX; DEC MicroVAX, VAX 11/7XX, and VAX 8XXX systems; AT&T 3B2 Series computers; NCR Tower systems; Data General Desktop Generation and MV Series computers; and multi-user microcomputers using XENIX/UNIX. Tominy products are compatible with Novell's Netware LAN and the OMNINET Local Area Network.

- DATA BASE-PLUS[®], introduced in 1978, is an application development system that includes a data base manager, screen

handler, print handler, supporting utilities, query/report writer, native language interfaces, and DATA BASE-PLUS Programming Language support.

- DATA BASE-PLUS pricing ranges from \$600 for a single-user PC to \$52,000 for an IBM mainframe.
- MACH 1^R, introduced in October 1985, expands the capabilities of DATA BASE-PLUS to include a fourth generation language (LOGIC), screen editing, and a program generator.
 - MACH 1 pricing ranges from \$600 for a single-user PC to \$75,000 for an IBM mainframe.
- Each multi-user development system includes 12 months of free customer support and product updates. The annual support and enhancement fee for the following year is equal to 15% of the purchase price of a customer's licensed systems. Thereafter, the fee will not increase more than 10% annually.
- Each single-user PC development system includes 90 days of free customer support.
- In July 1988, Tominy announced that it plans to develop MACH 1 and DATA BASE-PLUS systems for the IBM AS/400 family of computers. Availability is scheduled for June 1989.

Tominy's Integrated Business Systems (IBS) family of business application software products, introduced in 1982, require DATA BASE-PLUS or MACH 1 for the users target environment. IBS is not actively marketed to end users, but is generally sold to value-added remarketers that modify and resell the applications to specific vertical markets.

- IBS modules include Accounts Payable, Accounts Receivable, General Ledger, Inventory Control, Order Entry, and Sales Analysis.
- IBS modules are available for the same hardware environments as DATA BASE-PLUS and MACH 1. The modules range in price from \$500 for a single-user PC version to \$10,000 for a mainframe version. Licenses with source code are also available.

Tominy currently has more than 5,500 installations of its software products worldwide. Approximately 80% of the installations are

DATA BASE-PLUS, 15% are MACH 1, and 5% are Integrated Business Systems.

Professional/support services provided by Tominy include product installation and customer training, consulting, and custom system development.

- Training services are available for a fee at the customer's site or at Tominy's Education Center in Cincinnati.
- Ongoing maintenance and support services are available only to those customers who have at least one Tominy-trained employee actively involved in application development/support.
- Consulting services are available for \$700 to \$1,000 per day.

Industry Markets

Tominy's fiscal 1988 revenue was derived from clients in a range of industries, including discrete and process manufacturing, retail, education, and banking and finance.

Tominy clients range from small and medium organizations to large, Fortune 1000 companies.

A range of application software packages have been developed by Tominy value-added resellers using Tominy software development tools and IBS applications.

Clients include Air Products & Chemicals, Anheuser-Busch Companies, Beneficial, EG&G, General Dynamics, General Motors, Giant Food, Gillette Company, IBM U.K., Lomas & Nettleton, Lucky Stores, Manpower International, Publix Supermarkets, Super Valu Stores, Supermarkets General, UCLA, Ohio State University, University of Iowa, University of Auckland (New Zealand), and Virginia Commonwealth University.

- Beneficial Data Process Services selected Tominy software to standardize and automate the company's loan application and processing procedures on Data General computers at over 1,500 Beneficial offices nationwide.
- IBM U.K. selected Tominy software for remarketing to IBM Series/1 retail industry clients in the U.K. and Europe.
- Tominy-based application software is installed at over 35 Manpower International offices worldwide, on IBM 4300, Series/1, and PC computers.

International clients include Mexicana Airlines, British Petroleum, Alliance Data Centers, ASDA Supermarkets, and Procter & Gamble.

Geographic Markets

Approximately 90% of Tominy's fiscal 1988 revenue was derived from the U.S. and 10% from international sources.

Tominy has licensed distributors represented in Mexico, England, Belgium, France, West Germany, Finland, and Norway.

Computer Hardware and Software

Tominy maintains the following equipment:

- 1 IBM 4331, DOS/VSE with CICS.
- 1 IBM AS/400, B10.
- 1 IBM Series/1, CPS, EDX, RPS.
- 1 IBM System/34, SSP.
- 1 IBM System/36, SSP.
- 1 Data General Desktop, AOS.
- 1 DEC VAX-11/750, VMS.
- 1 AT&T 3B2, UNIX.

COMPANY HIGHLIGHT

TOMINY, INC.
4152 Crossgate Drive
Cincinnati, OH 45236
(513) 984-6605

Thomas E. Richley, Chairman
Larry Thacker, President
Private Corporation
Total Employees: 30
Total Revenue, Fiscal Year
End 9/30/81: 2,000,000*
Computer Services Revenue:
\$1,400,000*

THE COMPANY

- Tominy, Inc. is the outgrowth of a consulting contract with Champion International Corporation, for which Thomas E. Richley developed the Champion Distributed Processing System (CDPS), a data base software development package used in a distributed environment with the IBM Series/1 minicomputer. Tominy was organized as an Ohio corporation in January 1978 by Thomas Richley and Larry Thacker to market and develop the DATA BASE-PLUSTM (formerly CDPS) applications development system. Both men were former executives of Cincom Systems Inc., Richley being a co-founder of Cincom and the architect of the original version of the TOTAL[®] data base management system.
 - The company also markets minicomputer and related hardware, professional services, applications software, and customized turnkey systems to clients in all industry sectors.
- Tominy's 30 employees are distributed as follows:

- Marketing/sales	6
- Custom systems	9
- Software development/	
technical support	10
- General and administrative	<u>5</u>
	30
- Tominy considers the major competition for its DATA BASE-PLUS package to be IBM's IAM (Index Access Method) file accessing system. Although IAM is not functionally equivalent to DATA BASE-PLUS, it is the primary vendor supported accessing method.

KEY PRODUCTS AND SERVICES

- Approximately 50% of Tominy's fiscal 1981 revenue was derived from software product sales and 20% from related professional services. The remaining 30% of revenue was generated from hardware sales.

*INPUT estimate

1 of 4
February 1982

- Tominy's primary product is DATA BASE-PLUS, an applications development productivity tool designed specifically for minicomputers. It has a common interface logic allowing compatibility with microcomputers and mainframes. The product was originally designed to run in a distributed systems environment under Series/1 CPS. A version running under the EDX operating system was introduced in January 1981.
- DATA BASE-PLUS interfaces with COBOL, FORTRAN, PL/I, CHAMPTALK (Tominy's applications development language), EDL, and ASSEMBLER and operates on the IBM Series/1, Perkin Elmer 7/32 and 8/32, and Sentinel 8086-based processors. Versions are under development for use on the IBM Personal Computer, System/34, and 4300 Series computers.
- Components are sold on a modular basis, and include the following:
 - A data base management system provides minicomputer users with all DBMS capabilities available for mainframe systems. The DBMS uses a Data Definition Language that allows the user to store information independent from the program using it.
 - The Screen Handler eliminates much of the difficulty associated with the design and use of fixed-format data entry screens, and includes a transaction management system.
 - The Print Handler simplifies the writing and modification of application report programs through independent storage and access of control information and headings.
 - The Query/Report Writer allows nontechnical personnel to create their own logical view of the data base, easily extract information, perform computations, and develop customized report formats.
 - A complete set of utilities provides interactive generation of data bases, screens, program source and trace, job procedures sort, print and report control, data base statistics, and security code definitions.
 - Other components include a supervisor and logical control system, universal high-level language, and menu and procedure maintenance systems.
- Optional add-on features include a remote job entry facility, remote CRT and printer support, and a COBOL compiler.

- With over 400 installations at more than 60 organizations, DATA BASE-PLUS licenses for \$10,500 to \$25,000, depending upon components and environment chosen. Tominy first installed the product in March 1978.
- Less than 1% of Tominy's fiscal 1981 revenue was derived from the sale of applications software products designed for use with DATA BASE-PLUS.
- The company is a distributor for several products developed by other vendors. Applications include:
 - Mortgage loan closing.
 - Independent insurance agency accounting.
 - Medical applications.
 - Client/physician group billing.
 - Pharmacy.
 - Budgeting/general ledger.
 - Census management.
 - Ambulatory care.
 - Materials management.
 - Laboratory reporting.
 - Patient accounting.
- Tominy developed a credit union package for which it receives royalties. The product is presently marketed by another firm.
- In February 1982, Tominy introduced its financial applications package, which performs general ledger, accounts payable/receivable, and financial reporting functions. The package is marketed by Tominy for \$9,500 and will also be offered on a turnkey basis for use on the IBM Series/I minicomputer.
- Tominy recently acquired rights to several applications packages which are being integrated with DATA BASE-PLUS. The packages will be available separately and for use on a turnkey basis during 1982. Applications include manufacturing bill of materials and materials planning; order entry, invoicing, and inventory; and payroll/personnel.
- Professional services provided by Tominy include custom turnkey system and applications programming, systems consulting, and education.
- Tominy is a value-added remarketer (VAR) for IBM. Hardware sold includes IBM Series/I minicomputers, CRTs, printers, and tape drives. The company also markets CDC disk drives, ADDS terminals, and Texas Instruments printers.
- Tominy recently contracted to provide custom programming support for the Fireman's Fund Insurance Company's independent insurance agent turnkey system, which will be sold with DATA BASE-PLUS software. The system, due for release in early 1982, will sell for \$55,000 to \$200,000 and runs on IBM Series/I equipment under EDX.

INDUSTRY MARKETS

- Tominy's fiscal 1981 revenue was derived from clients across industry sectors.

GEOGRAPHIC MARKETS

- Approximately 90% of Tominy's fiscal 1981 computer services revenue was derived from across the U.S. The remaining 10% of revenue was from clients in Canada, Europe, and New Zealand.
 - Hardware-related revenue was derived from the U.S.
- A licensed representative is located in Toronto.

COMPUTER HARDWARE AND SOFTWARE

- Tominy maintains the following equipment:
 - 2 IBM Series/1-4955s, running under CPS and EDX.
 - 2 IBM Series/1-4952s, running under CPS and EDX.
 - 1 IBM System 34, running under SSP.
 - 1 IBM Personal Computer, running under MS/DOS.

COMPANY PROFILE

TONE SOFTWARE CORPORATION
1735 South Brookhurst Street
Anaheim, CA 92804
(714) 991-9460

John W. Hutchison, President
Private Corporation
Total Employees: 20
Total Revenue, Fiscal Year End
6/30/87: \$2,500,000*

THE COMPANY

- Tone Software Corporation, founded in 1974 by Jerry Slater and John Hutchison, develops and market systems software for IBM mainframes and markets software developed by third parties. The company also provides custom programming and systems consulting professional services.
- In January 1987, Tone underwent a change of ownership. It is still a privately held corporation with Mr. John W. Hutchison as president, CEO, and owner.
- As of June 1987 Tone Software had 20 employees segmented as follows:

Marketing/sales	7
Software development and programming	8
General and administrative	<u>5</u>
	20

- Major competitors include Computer Associates, Levi, Ray & Shoup, IBM, and South West Software.

KEY PRODUCTS AND SERVICES

- INPUT estimates 95% of Tone's fiscal 1987 revenue was derived from developing and marketing systems software products and the development of customized software. The remaining 5% of revenue was from marketing software developed by other companies.
 - A listing of available software products is provided in the exhibit.
 - Tone software runs on IBM 370, 43XX, 303X, 3081, and compatible mainframes.
 - All of Tone's products are on-line, with the exception of PHASOR, which is available in a batch mode, and PROCMAN, which runs both batch and on-line.

EXHIBIT

TONE SOFTWARE PRODUCTS

PRODUCT	DESCRIPTION	CPU REQUIREMENTS (OPERATING SYSTEM)
<u>TONE OPERATIONS PRODUCTIVITY SOFTWARE</u>		
CONTROL-M	Complete Job Scheduling and Production Control System	OS/MVS
FLASHER	High Performance TSO output review quality	OS/MVS
PHASOR	Sysout data allocating and releasing system	OS/VS1
TSO ACCESS MANGER	Effective Management of TSO users tool	
TS-PRINT	Spool to local and remote printers	OS/VS1, OS/MVS
TS-RMDS	Report Management and distribution tool	OS/MVS
<u>CICS PRODUCTIVITY SOFTWARE</u>		
CATVS	Allows CICS to TONE 3 & TONE 4 interface	OS/VS1, OS/MVS
CICS CONNECTION	Allows windows to be active under CICS	
CSMT LOCK	CICS CEMT/CSMT flexible security tool	DOS/VS1, OS/VS1, OS/MVS
FAST FORMAT	CICS BMS Macro generator	DOS/VS1, OS/VS1, OS/MVS
MULTI-TRAN	CICS windowing package	DOS/VS1, OS/VS1, OS/MVS
TS-DEARS	CICS Data entry and retrieval tool	DOS/VS1, OS/VS1, OS/MVS
TS-SAFE	CICS security product	DOS/VS1, OS/VS1, OS/MVS
<u>TSO ENHANCEMENT SOFTWARE</u>		
DYNA-LIB	An architecture of library maintenance products	OS/MVS
FSM	TSO full screen editor	OS/VS1, OS/MVS
FSO	VS1/MVS utilities package	OS/VS1, OS/MVS
PROCMAN	TSO CUST Compiler	OS/VS1, OS/MVS
TONE 3	Real TSO for VS1	OS/VS1
TONE 4	Replacement for MVS TSO	OS/MVS
328 X	Screen print for TONE 3 & 4	OS/VS1, OS/MVS

TONE SOFTWARE CORPORATION

- The company's primary revenue is generated by its newer products, including TS-PRINT, FLASHER, PROCMAN, and CONTROL-M. These products contributed approximately 80% of fiscal 1987 revenue.
 - TS-PRINT is an operations productivity software that writes and prints output residing in the JES Spool Queue to a variety of hard copy devices.
 - FLASHER is an MYS-based utility package that enhances spooled output retrieval for SPF and ISPF users under JES 2 and JES 3.
 - PROCMAN is an on-line/batch TSO CLIST compiler which creates executable load modules from normal TSO CLISTS.
 - CONTROL-M is a job scheduling and production control system.
 - The product was developed by Fourth Dimension Software, Ltd. of Israel in 1983.
- Tone provides a 24-hour hotline service as customer support for their software packages.
- Professional services provided by Tone include consulting and custom programming related to operating systems software.

INDUSTRY MARKETS

- Tone's fiscal 1987 revenue was derived from across industry sectors.
- Clients include Calcomp, U.S. Borax, General Motors, Harris Corporation, and Automatic Data Processing.

GEOGRAPHIC MARKETS

- INPUT estimates 70% of Tone's fiscal 1987 revenue was derived from the U.S. The remaining 30% of revenue was from foreign markets including Australia, Europe, and New Zealand.
- Tone has three independent agents with locations in Europe, Australia, New Zealand, and South Africa.

COMPUTER HARDWARE AND SOFTWARE

- Tone Software maintains the following equipment at its Anaheim headquarters:
 - 1 IBM 370/158 AP, VSI.
 - 1 IBM 370/158 UP, MVS.



COMPANY HIGHLIGHT

TONE SOFTWARE CORPORATION

1735 South Brookhurst Street
Anaheim, CA 92804
(714) 991-9460

Jerry Slater, President
Private Corporation
Total Employees: 15
Total Revenue, Fiscal Year End
6/30/83: \$2,000,000*

THE COMPANY

- Tone Software Corporation, founded in 1974 by Jerry Slater and John Hutchinson, primarily markets systems software products. Tone also provides custom programming and systems consulting services.

- As of June 1983 Tone Software had 15 employees segmented as follows:

Marketing/sales	4
Software development and programming	6
General and administrative	<u>5</u>
	15

- Major competition for the company's TONE 3 and 4 software products comes from Applied Data Research (ADR/ROSCOE), Pansophic Systems (OWL), and On-Line Business Systems (WYLBUR). Competition also comes from Levi, Ray and Schoup, Inc., a consulting firm headquartered in Springfield (IL) whose primary software package, VPS, competes with Tone's TSPRINT.

KEY PRODUCTS AND SERVICES

- Ninety percent of Tone's fiscal 1983 revenue was derived from systems software products and related services. Of the remaining 10% of revenue, 8% was derived from consulting services and 2% from custom programming.
 - A listing of available software products is provided in the exhibit.
 - Tone software runs on IBM 370, 43XX, 303X, 3081 and compatible mainframes.
 - All of Tone's products are on-line, with the exception of PHASOR, which is available in a batch mode, and PROCMAN, which runs both batch and on-line.
 - Maintenance is included in the monthly rental plan and for a period of 12 months in the fully paid license and all lease plans. Subsequent maintenance is available for approximately 12% of the fully paid license fee.

*INPUT estimate

EXHIBIT

TONE SOFTWARE PRODUCTS

PRODUCT	DESCRIPTION	YEAR INTRODUCED	LICENSE FEE	NUMBER INSTALLED
TONE 3	Enhanced TSO replacement package for OS/VS1 installations.	1974	\$29,900	300
TONE 4	Enhanced TSO replacement package for MVS installations.	1980	\$29,900	50
FSE	Full-screen editor.	1976	N/A	N/A
FSM	Full-screen editor.	1981	\$ 3,500	300 - 400
FSO	Job status and spooled I/O utility package for 3270 users.	1980	\$ 6,000	100
ISP*	Routes spooled I/O data between multiple mainframes.	1978	\$ 8,000	10
PHASOR	Allocates and releases SYSOUT data sets for early printing.	1978	\$ 6,500	10
PROCMAN*	TSO CLIST compiler.	1982	\$10,000	10
	TSO version.		\$10,000	
	TONE version.		\$ 9,000	
TSC-328X	Connects 3270-type display stations to 328X-type printer devices.	1979	\$ 4,200	75
TSPRINT	Attached printer support package and JES external writer.	1983	\$ 8,000	5

* Licensed by CPU

TONE SOFTWARE CORPORATION

- The company's principal products, TONE 3 and TONE 4, are enhanced replacements for IBM's TSO (Timesharing Option). The systems use TSO command structure and are designed to decrease management overhead associated with telecommunications networks and the interaction of multiple on-line users.
 - The TONE 3 and 4 systems use BTAM for terminal network management. The systems' use of multitasking and virtual memory management enhances throughput and eliminates the requirement for user swapping. Standard features include:
 - Dynamic allocation of data sets and terminals.
 - A full-screen editor.
 - TSO Interactive Program Execution.
 - Enhanced 3270 facilities.
 - Horizontal screen scrolling.
 - Standard OS/VS file structure.
 - Programmable program function key support.
 - Support of TSO CLIST and command processors.
 - An internal software reader for submitting jobs directly into the VSI job queue.
- The following features are included in the TONE 3 and 4 lease price. FSM, PROCMAN, and TSPRINT may also be licensed separately.
 - Interfaces to source library maintenance systems:
 - TPAN (Interactive PANVALET Command Processor) allows the user to interface with Pansophic's PANVALET interactively.
 - TLIB (Interactive LIBRARIAN Command Processor) allows full utilization of Applied Data Research's LIBRARIAN resources.
 - FSM (Full Screen Mode), a product not originally developed by Tone, is a full-screen editor providing users with complete capabilities of 3270 protocol.
 - PROCMAN is a TSO CLIST compiler that lessens or eliminates CLIST EXEC processing and reduces CPU requirements during the first phase of CLIST processing.
 - TSPRINT, introduced in early 1983, is an attached printer support package and JES external writer that provides a direct interface between the JES spool and various hard copy devices.
- TONE 3, which has generated over \$5 million in revenue since its introduction in 1974, allows users in OS/VSI installations to perform the following functions in a TSO compatible format:
 - Edit standard VSI data sets.
 - Submit jobs directly to the JES job queue.

STONE SOFTWARE CORPORATION

- Review jobs directly from the JES output spool.
- Interactively execute system commands, programs, and utilities.
- TONE 4 provides enhanced TSO performance to MVS installations through the following capabilities:
 - The ability to run multiple users in a single address space.
 - A 133-character logical screen with left and right scrolling.
 - User-defined program function keys.
 - Instant interrupt.
- Other Tone software products that run with TONE 3 and 4 include the following:
 - FSE (Full-Screen Edit), a high performance full-screen editor, was developed by Applied Software, Inc. FSE interfaces with TONE 3 only.
 - FSO (Full Screen Output) is an on-line utility package that enables the 3270 user to review spooled I/O and determine system job status. Since output commands act directly on the JES queue, no intermediate file is necessary.
 - TSC-328X support allows users to connect 3270-type display stations to 328X-type printer devices.
- Additional Tone systems software products follow:
 - ISP (Intersystem Spool Processor) allows spooled I/O data to be routed between local mainframes running under OS/VS1 and/or OS/MVS. ISP also assists in the conversion from VS1 to MVS.
 - PHASOR allows OS/VS1 users to dynamically allocate and release SYSOUT data sets for early printing.
- Professional services consulting and custom programming provided by Tone include work with operating systems software.

INDUSTRY MARKETS

- Tone's fiscal 1983 revenue was derived from across industry sectors.
- Clients include Calcomp, U.S. Borax, General Motors, Harris Corporation, and Automatic Data Processing.

GEOGRAPHIC MARKETS

- Seventy percent of Tone's fiscal 1983 revenue was derived from the U.S. Thirty percent of revenue was from foreign markets including Australia, Saudi Arabia, Africa, Europe, New Zealand, Mexico, Central South America, and the Far East.

TONE SOFTWARE CORPORATION

- Tone has three independent agents with locations in Europe, Australia, New Zealand, and South Africa.

COMPUTER HARDWARE AND SOFTWARE

- Tone Software maintains the following equipment at its Anaheim headquarters:
 - 1 IBM 370/158 AP, VSI.
 - 1 IBM 370/158 UP, MVS.
 - 1 Cambex 1636, VSI, MVS.



COMPANY PROFILE

TOTAL SYSTEM SERVICES, INC.

1200 Sixth Avenue
P.O. Box 1755
Columbus, GA 31902-1755
(404) 649-2310

Richard W. Ussery, Chairman and CEO
Majority Owned Subsidiary of Columbus
Bank and Trust Company
Total Employees: 1,245 (12/91)
Total Revenue, Fiscal Year End
12/31/91: \$112,361,000

The Company

Total System Services, Inc. (TSYS) provides bankcard processing and associated services to the banking and finance industry. Bankcard processing services and equipment leasing provided to its parent/affiliates represented approximately 1% of 1991 revenue.

- TSYS was formed in January 1983 as a successor to the bankcard and general bank data processing operations conducted by the Total System Services Division and the data processing and purchasing departments of Columbus Bank and Trust Company (CB&T).
- In August 1983, TSYS issued 520,000 shares of common stock in an initial public offering. TSYS now operates as an 81.8% owned subsidiary of CB&T, which is a wholly owned subsidiary of Synovus Financial Corp. TSYS common stock was traded in the over-the-counter market until June 1989, when the stock began trading on the New York Stock Exchange.
- Through 1989, TSYS also provided general bank processing services to CB&T and several of its affiliate banks. In January 1990, TSYS completed the sale of its bank data processing operations to Synovus Data Corp., a newly created wholly owned subsidiary of Synovus, for approximately \$1.5 million. The sale allows TSYS to devote its full resources to the expansion and development of card-related services.
- TSYS management states that the company is the second largest third-party bankcard data processor in the U.S.

TSYS had total 1991 revenue of \$112.4 million, a 34% increase over 1990 revenue of \$83.9 million. Net income rose 20%, from \$12.7 million in 1990 to \$15.2 million in 1991. A five-year financial summary follows:

**TOTAL SYSTEM SERVICES, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ millions, except per share data)**

ITEM	FISCAL YEAR					
	1991	1990	1989	1988	1987	CAGR
Revenue	\$112.4	\$83.9	\$65.9	\$56.2	\$46.3	25%
· Percent increase from previous year	34%	27%	17%	21%	27%	
Income before taxes	\$24.3	\$20.3	\$17.4	\$15.4	\$12.9	17%
· Percent increase from previous year	20%	17%	13%	20%	24%	
· Gross margin	22%	24%	26%	27%	28%	
Net income	\$15.2	\$12.7	\$11.3	\$9.5	\$7.2	21%
· Percent increase from previous year	20%	12%	19%	33%	37%	
· Net margin	14%	15%	17%	17%	16%	
Earnings per share	\$0.96	\$0.80	\$0.71	\$0.60	\$0.45	21%
· Percent increase from previous year	20%	13%	18%	33%	36%	

Bankcard processing services accounted for nearly 92% of TSYS' 1991 revenue. As a result of the growth in the number of customer accounts processed by TSYS and the increased use of bankcards worldwide, revenues related to these services have continued to increase.

- The average number of bankcard cardholder accounts processed was approximately 23.6 million in 1991, 16.5 million in 1990, and 12.5 million in 1989.
- The growth in cardholder accounts is attributed to the addition of several new significant customers, and portfolio acquisitions and normal portfolio growth of existing customers, reflecting a nationwide trend of consolidation of credit card portfolios and increased use of third-party processors.
- Additional growth has been provided from TSYS customers offering new card services such as ATM, debit, private label, premium, and corporate cards.

- As of December 31, 1991, the number of bankcard customer accounts processed by TSYS had increased to 27.0 million, up 28% from 21.0 million at year-end 1990.
- Total cardholder accounts, including both bankcard customers and facilities management customer accounts, were approximately 27.1 million, 22.5 million, and 15.5 million at year end for 1991, 1990, and 1989, respectively.
- The number of merchant accounts processed by TSYS was 314,000 at year-end 1991, compared to 283,000 and 268,000 at year-end 1990 and 1989, respectively. Merchant accounts produce a higher volume of transactions and item charges per account than regular cardholder accounts and, as a result, contribute more revenue per account.
- By December 31, 1991, TSYS was processing 558,000 facilities management (systems operations) service transactions, as compared to 1.5 million and 1.3 million at year-end 1990 and 1989, respectively.

In March 1990, TSYS and Synovus signed agreements with a subsidiary of AT&T under which a newly formed wholly owned banking subsidiary of Synovus issues a credit card with either a VISA or MasterCard affiliation under the name "The AT&T Universal Card."

- TSYS is the exclusive provider of processing services for the credit card. Since 1990, AT&T has become a major customer of TSYS, with over seven million cardholder accounts on file as of December 31, 1991 and contributing 24.5% to TSYS' 1991 revenue.
- Under the agreement, AT&T has the right to purchase up to 1.5 million newly issued shares of TSYS common stock.

As of December 31, 1991, TSYS had 1,245 employees. The company currently has 1,291 employees.

The company's major competitor is First Data Resources (a subsidiary of American Express).

Key Products and Services

A three-year summary of source of revenue follows:

TOTAL SYSTEM SERVICES, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

	FISCAL YEAR					
	1991		1990		1989	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Noncaptive revenue						
- Bankcard processing	\$101.7	90%	\$72.4	86%	\$53.0	80%
- Facilities management	5.3	5%	5.7	7%	4.5	7%
- Equipment leasing	1.7	2%	1.8	2%	1.7	3%
	\$108.7	97%	\$79.8	95%	\$59.2	90%
Captive revenue						
- Bankcard processing	\$1.2	1%	\$1.0	1%	\$0.9	1%
- Other processing (a)	--	--	--	--	4.2	6%
- Equipment leasing	0.3	--	0.3	--	0.3	--
	\$1.5	1%	\$1.3	2%*	\$5.4	8%*
Other operating income	\$2.1	2%	\$2.8	3%	\$1.2	2%
TOTAL*	\$112.4	100%	\$83.9	100%	\$65.8	100%

* Differences due to rounding

(a) Includes operations sold to Synovus in January 1990.

TSYS provides a complete line of bankcard processing services, marketed as "The Total SystemSM", including card production, international and domestic financial settlement, cardholder statement preparation, collection information, customer service support, merchant accounting, credit scoring, on-line credit bureau reporting, and management information and reporting, to 110 card-issuing institutions located in the U.S., Puerto Rico, and Canada.

- In its bankcard processing operations, TSYS primarily processes cardholder accounts for customers issuing VISA, VISA Gold, MasterCard, and MasterCard Gold credit cards; VISA and MasterCard debit cards; cards for automated teller machines; private label cards; corporate cards; cards issued by affinity groups, such as motor clubs, insurance companies, and universities; and for customers extending executive and consumer equity lines of credit.
- Bankcard processing services are provided through a national network of on-line computer terminals and data transmission equipment. During 1991, this on-line network supported over 30,000 remote CRT terminals located at the facilities of various customers serviced by TSYS.

- TSYS customers can receive on-line credit reports from five major credit bureaus in a common format directly through The Total System, rather than having to communicate separately with each bureau.
- TSYS processed 900 million cardholder transactions during 1991, compared to 686 million in 1990 and 587 million in 1989.
- During 1991, TSYS completed the conversion and consolidation of the C&S/Sovran portfolio of accounts to the Total System, representing one of the largest conversions ever completed by the company. In early 1992, C&S/Sovran and NCB (Texas), both TSYS customers, merged. Combined revenues from the two institutions represented 11% of TSYS' total 1991 revenue.
- During 1990, TSYS also signed an agreement with Circuit City Stores to provide processing services for Circuit City's new private label card. TSYS continues to explore opportunities in the retail industry.

Equipment leasing services are provided by Columbus Depot Equipment Company, Inc., a wholly owned subsidiary of TSYS.

Industry Markets

Approximately 1% of TSYS' 1991 revenue was derived from services provided to CB&T and its affiliates. Of the remaining 99% of revenue, approximately 95% (\$106 million) was derived from the banking and finance industry and 5% (\$53 million) was derived from oil companies, airlines, and retailers.

AT&T Universal Card Services Corporation, a subsidiary of AT&T, contributed 24.5% (27.5 million) and 16.7% (\$14 million) to TSYS' 1991 and 1990 revenue, respectively.

The combined revenues of NCB and C&S/Sovran, two TSYS customers that merged in 1992, accounted for 11% (\$13.6 million) and 7.9% (\$6.6 million) of TSYS' total revenue in 1991 and 1990, respectively.

Geographic Markets

Virtually all of TSYS' 1991 revenue was derived from the U.S. A small amount was derived from Puerto Rico and Canada.

The company's sales office and production centers are located in Columbus.

In November 1990, TSYS opened a satellite development center in Atlanta (GA) to handle immediate needs for experienced programmers.

During 1991, TSYS completed construction of a new, \$20 million, 200,000 square foot product center in North Columbus. This facility houses computer operations, statement printing and mailing operations, microfiche production, central supply storage, and other related operations.

Computer Hardware

TSYS has the following computers installed in support of its processing services:

- 1 IBM 9020-620
- 1 IBM 3090-600E
- 1 IBM 3090-500E
- Tandem NonStops

COMPANY PROFILE

TOTAL SYSTEM SERVICES, INC.

1200 Sixth Avenue
P.O. Box 1755
Columbus, GA 31902-1755
(404) 649-2310

Richard W. Ussery, President and CEO
Majority Owned Subsidiary of Columbia
Bank and Trust Company
Total Employees: 1,195 (12/90)
Total Revenue, Fiscal Year End
12/31/90: \$83,865,000
Noncaptive Revenue: \$82,625,000

The Company

Total System Services, Inc. (TSYS) provides bankcard processing and associated services to the banking and finance industry. The company also provides credit card facilities management (systems operations) processing services to airline, oil, and telephone equipment companies. Bankcard processing services and equipment leasing provided to its parent/affiliates represented approximately 1% of 1990 revenue.

- TSYS was formed in January 1983 as a successor to the bankcard and general bank data processing operations conducted by the Total System Services Division and the data processing and purchasing departments of Columbia Bank and Trust Company (CB&T).
- In August 1983, TSYS issued 520,000 shares of common stock in an initial public offering. TSYS now operates as an 81.8% owned subsidiary of CB&T, which is a wholly owned subsidiary of Synovus Financial Corp. TSYS common stock was traded in the over-the-counter market until June 1989, when the stock began trading on the New York Stock Exchange.
- Through 1989, TSYS also provided general bank processing services to CB&T and several of its affiliate banks. In January 1990, TSYS completed the sale of its bank data processing operations to Synovus Data Corp., a newly created wholly owned subsidiary of Synovus, for approximately \$1.5 million. The sale allows TSYS to devote its full resources to the expansion and development of card-related services.
- TSYS management states that the company is the second largest third-party bankcard data processor in the U.S.

TSYS had total 1990 revenue of \$83.9 million, a 27% increase over 1989 revenue of \$65.9 million. Net income rose 12%, from

\$11.3 million in 1989 to \$12.7 million in 1990. A five-year financial summary follows:

**TOTAL SYSTEM SERVICES, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ millions, except per share data)**

ITEM	FISCAL YEAR					
	1990	1989	1988	1987	1986	CAGR
Revenue	\$83.9	\$65.9	\$56.2	\$46.3	\$36.4	23%
• Percent increase from previous year	27%	17%	21%	27%	28%	
Income before taxes	\$20.3	\$17.4	\$15.4	\$12.9	\$10.4	18%
• Percent increase from previous year	17%	13%	20%	24%	61%	
• Gross margin	24%	26%	27%	28%	29%	
Net income	\$12.7	\$11.3	\$9.5	\$7.2	\$5.2	25%
• Percent increase from previous year	12%	19%	33%	37%	21%	
• Net margin	15%	17%	17%	16%	14%	
Earnings per share	\$0.80	\$0.71	\$0.60	\$0.45	\$0.33	25%
• Percent increase from previous year	13%	18%	33%	36%	22%	

Bankcard processing services accounted for 87.5% of TSYS' 1990 revenue. As a result of the growth in the number of customer accounts processed by TSYS and the increased use of bankcards worldwide, revenues related to these services have continued to increase.

- The average number of bankcard cardholder accounts processed was approximately 16.5 million in 1990, 12.5 million in 1989, and 10.8 million during 1988.
- The growth in cardholder accounts is attributed to the addition of several new significant customers, and portfolio acquisitions and normal portfolio growth of existing customers, reflecting a nationwide trend of consolidation of credit card portfolios and increased use of third-party processors.
- Additional growth has been provided from TSYS customers offering new card services such as ATM, debit, private label, premium, and corporate cards.

- As of December 31, 1990, the number of bankcard customer accounts processed by TSYS had increased to 21 million, up 48% from 14.2 million at year-end 1989.
- Total cardholder accounts, including both bankcard customers and facilities management customer accounts, were approximately 22.5 million, 15.5 million, and 12.5 million at year end for 1990, 1989, and 1988, respectively.
- The number of merchant accounts processed by TSYS was 283,000 at year-end 1990, compared to 268,000 and 252,000 at year-end 1989 and 1988, respectively. Merchant accounts produce a higher volume of transactions and item charges per account than regular cardholder accounts, and as a result, contribute more revenue per account.
- At December 31, 1990, TSYS was processing 1.5 million customer accounts through facilities management (FM) services, as compared to 1.3 million at year-end 1989 and 1988.

In March 1990, TSYS and Synovus signed agreements with a subsidiary of AT&T under which a newly formed wholly owned banking subsidiary of Synovus issues a credit card with either a VISA or MasterCard affiliation under the name "The AT&T Universal Card."

- The agreement stipulates that TSYS is the exclusive provider of processing services for the new credit card. During 1990, AT&T became a major customer of TSYS, with over four million cardholder accounts on file as of December 31, 1990 and contributing 16.7% to TSYS' total 1990 revenue.
- Under the agreement, AT&T has the right to purchase up to 1.5 million newly issued shares of TSYS common stock.

As of December 31, 1990, TSYS had 1,195 employees. The company currently has 1,250 employees.

The company's major competitor is First Data Resources (a subsidiary of American Express).

Key Products and Services

A three-year summary of source of revenue follows:

TOTAL SYSTEM SERVICES, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

ITEM	FISCAL YEAR					
	1990		1989		1988	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Noncaptive revenue						
- Bankcard processing	\$72.4	86%	\$53.0	80%	\$45.1	80%
- Facilities management	5.7	7%	4.5	7%	3.5	6%
- Other processing (a)	--	--	--	--	0.1	--
- Equipment leasing	1.7	2%	1.8	3%	1.7	3%
	\$79.8	95%	\$59.3	90%	\$50.4	90%*
Captive revenue						
- Bankcard processing	\$1.0	1%	\$0.9	1%	\$0.8	1%
- Other processing (b)	--	--	4.2	6%	3.9	7%
- Equipment leasing	0.3	--	0.3	--	0.3	1%
	\$1.3	2%*	\$5.4	8%*	\$5.0	9%
Other operating income	\$2.8	3%	\$1.2	2%	\$0.8	1%
TOTAL	\$83.9	100%	\$65.9	100%	\$56.2	100%

* Differences due to rounding

(a) Actual amounts were \$26,315 in 1990 and \$52,291 in 1989.

(b) Includes operations sold to Synovus in January 1990.

TSYS provides a complete line of bankcard processing services, marketed as "The Total SystemSM", including card production, international and domestic financial settlement, cardholder statement preparation, collection information, customer service support, merchant accounting, credit scoring, on-line credit bureau reporting, and management information and reporting, to card-issuing institutions located in the U.S., Puerto Rico, and Canada.

- In its bankcard processing operations, TSYS primarily processes cardholder accounts for customers issuing VISA, VISA Gold, MasterCard, and MasterCard Gold credit cards; VISA and MasterCard debit cards; cards for automated teller machines; private label cards, including cards issued by various members of the airline and petroleum industries and the telephone equipment industry; corporate cards; cards issued by affinity groups, such as motor clubs, insurance companies, and universities; and for customers extending executive and consumer equity lines of credit.

- Bankcard processing services are provided through a national network of on-line computer terminals and data transmission equipment. During 1989, this on-line network supported over 11,000 remote CRT terminals located at the facilities of various customers serviced by TSYS.
- TSYS customers can receive on-line credit reports from five major credit bureaus in a common format directly through The Total System, rather than having to communicate separately with each bureau.
- As of December 31, 1990, TSYS provided bankcard processing services to 110 customers located in 34 states, Canada, and Puerto Rico. Customers included 100 financial institutions, two airlines, one telephone equipment company, and two oil companies.
- TSYS processed 686 million cardholder transactions during 1990, compared to 587 million in 1989 and 487 million in 1988.
- New bankcard processing customers include C&S Sovran Corporation, NCNB (Texas), and Central Fidelity Bank of Richmond (VA). The conversion of these customers to The Total System was completed in 1990, with the exception of C&S Sovran, which will be completed in 1991. TSYS management anticipates an increase of 15% to 20% in the number of bankcard cardholder accounts in 1991.
- During 1990, TSYS also signed an agreement with Circuit City Stores to provide processing services for Circuit City's new private label card.

TSYS offers facilities management services to meet the needs of customers who wish to offer card services but prefer that another organization administer those services.

- Services provided by TSYS include the investigation and approval of credit, customer service to credit cardholders, collection services, accounting, file maintenance, and processing of all cardholder transactions.
- FM customers include AT&T Phone Centers, Continental Air Lines, Crown Central Petroleum, Eastern Air Lines, and Fina Oil and Chemical Company.

Equipment leasing services are provided by Columbus Depot Equipment Company, Inc., a wholly owned subsidiary of TSYS.

Industry Markets

Approximately 2% of TSYS' 1990 revenue was derived from services provided to CB&T and its affiliates and 3% from interest income. Of the remaining 95% of revenue, approximately 93% (\$74.1 million) was derived from the banking and finance industry and 7% (\$5.7 million) was derived from oil companies and airlines.

AT&T Universal Card Services Corporation, a subsidiary of AT&T, contributed 16.7% (\$14 million) to TSYS' 1990 revenue.

Geographic Markets

Virtually all of TSYS' 1990 revenue was derived from the U.S. A small amount was derived from Puerto Rico and Canada.

The company's sales office and production centers are located in Columbus.

In November 1990, TSYS opened a satellite development center in Atlanta (GA) to handle immediate needs for experienced programmers.

Construction of a new, \$20 million, 200,000 square-foot product center in North Columbus continues, with completion and occupancy expected during the second quarter of 1991. This facility will house computer operations, statement printing and mailing operations, microfiche production, central supply storage, and other related operations.

Computer Hardware

As of June 1991, TSYS will have the following computers installed in support of its processing services:

- 1 IBM 9020-620
- 1 IBM 3090-600E
- 1 IBM 3090-500E
- Tandem NonStops

COMPANY PROFILE

TOTAL SYSTEM SERVICES, INC.

1200 Sixth Avenue
P.O. Box 1755
Columbus, GA 31902-1755
(404) 649-2310

Richard W. Ussery, President and CEO
Majority Owned Subsidiary of Columbia
Bank and Trust Company
Total Employees: 834 (12/89)
Total Revenue, Fiscal Year End
12/31/89: \$65,881,000
Noncaptive Revenue: \$59,264,000

The Company

Total System Services, Inc. (TSYS) provides bankcard processing and associated services to the banking and finance industry. The company also provides credit card facilities management processing services to airline, oil, and telephone equipment companies. Processing services provided to its parent/affiliates represented approximately 8% of 1989 revenue.

- TSYS was formed in January 1983 as a successor to the bankcard and general bank data processing operations conducted by the Total System Services Division and the data processing and purchasing departments of Columbia Bank and Trust Company (CB&T).
- In August 1983, TSYS issued 520,000 shares of common stock in an initial public offering. TSYS now operates as an 81.8% owned subsidiary of CB&T, which is a wholly owned subsidiary of Synovus Financial Corp. TSYS common stock was traded in the over-the-counter market until June 1989, when the stock began trading on the New York Stock Exchange.
- Through 1989, TSYS also provided general bank data processing services to CB&T and several of its affiliate banks. In January 1990, TSYS completed the sale of its bank data processing operations to Synovus Data Corp., a newly created wholly owned subsidiary of Synovus, for approximately \$1.5 million. The sale allows TSYS to devote its full resources to the expansion and development of card related services.
- TSYS management states that the company is the second largest third-party bankcard data processor in the U.S.

TSYS had total 1989 revenue of \$65.9 million, a 17% increase over 1988 revenue of \$56.2 million. Net income rose 19%, from

\$9.5 million in 1988 to \$11.3 million in 1989. A five-year financial summary follows:

**TOTAL SYSTEM SERVICES, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ millions, except per share data)**

ITEM	FISCAL YEAR					
	1989	1988	1987	1986	1985	CAGR
Revenue	\$65.9	\$56.2	\$46.3	\$36.4	\$28.4	23%
• Percent increase from previous year	17%	21%	27%	28%	36%	
Income before taxes	\$17.4	\$15.4	\$12.9	\$10.4	\$6.5	28%
• Percent increase from previous year	13%	20%	24%	61%	16%	
• Gross margin	26%	27%	28%	29%	23%	
Net income	\$11.3	\$9.5	\$7.2	\$5.2	\$4.3	27%
• Percent increase from previous year	19%	33%	37%	21%	38%	
• Net margin	17%	17%	16%	14%	15%	
Earnings per share	\$0.71	\$0.60	\$0.45	\$0.33	\$0.27	27%
• Percent increase from previous year	18%	33%	36%	22%	35%	

TSYS management attributes revenue growth in 1989 primarily to growth in the volume of bankcard data processing services.

- The average number of cardholder accounts processed by TSYS was approximately 13.8 million in 1989, compared to 12.1 million in 1988 and 10.6 million in 1987. As of December 31, 1989, the number of cardholder accounts processed by TSYS was 15.5 million, a 24% increase over 12.5 million at year-end 1988.
- The growth in cardholder accounts was attributed to the addition of new customers and existing customers adding to their base of cardholder accounts.
- During 1989, the average number of merchant accounts processed by TSYS was 261,000, compared to 228,000 in 1988, and 159,000 in 1987. Merchant accounts produce a higher volume of transactions and item charges per account than

regular cardholder accounts and, as a result, contribute more revenue per account.

Facilities management revenue increased 26% during 1989 primarily due to the growth in the volume of services provided for customers and price increases. At year-end 1989, cardholder accounts serviced through facilities management represented 1.3 million, or 8.5% of the total number of accounts processed by TSYS.

Revenue for the six months ending June 30, 1990 reached \$36.4 million, a 16% increase over \$31.5 million for the same period in 1989. Net income rose 13%, from \$5.0 million to over \$5.6 million.

In March 1990, TSYS and Synovus signed agreements with a subsidiary of AT&T under which a newly formed wholly owned banking subsidiary of Synovus will issue a credit card with either a VISA or MasterCard affiliation under the name "The AT&T Universal Card."

- The agreement stipulates that TSYS will be the exclusive provider of processing services for the new credit card.
- Under the agreement, AT&T has the right to purchase up to 1.5 million newly issued shares of TSYS common stock.

As of December 31, 1989, TSYS had 834 employees. The company currently has 950 employees.

The company's major competitor its First Data Resources (a subsidiary of American Express).

Key Products and Services

Ninety-eight percent of TSYS' 1989 revenue was derived from its various processing services. The remaining 2% of revenue was derived from other income, which includes gross rental income from the leasing of computer-related equipment required in conjunction with bankcard and other processing.

A three-year summary of source of revenue follows:

TOTAL SYSTEM SERVICES, INC.
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

ITEM	FISCAL YEAR					
	1989		1988		1987	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Noncaptive revenue						
- Bankcard processing	\$54.8	83%	\$46.8	83%	\$38.4	83%
- Other bank processing (a)	—	—	0.1	—	0.1	—
- Facilities management	4.5	7%	3.5	6%	2.1	5%
	\$59.3	90%	\$50.4	89%	\$40.6	88%
Captive revenue						
- Bankcard processing	\$0.9	1%	\$0.9	2%	0.9	2%
- Other bank processing (b)	4.5	7%	4.1	7%	4.1	9%
	\$5.4	8%	\$5.0	9%	\$5.0	11%
Other operating income	\$1.2	2%	\$0.8	1%	\$0.6	1%
TOTAL	\$65.9	100%	\$56.2	100%	\$46.2	100%

(a) Actual amounts were \$31,000 in 1989, \$65,000 in 1988, and \$105,000 in 1987.

(b) Includes operations sold to Synovus in January 1990.

TSYS provides a complete line of bankcard processing services, marketed as "The Total SystemSM", including card production, international and domestic financial settlement, cardholder statement preparation, collection information, customer service support, merchant accounting, credit scoring, on-line credit bureau reporting, and management information and reporting, to card-issuing institutions located in the U.S., Puerto Rico, and Canada.

- In its bankcard processing operations, TSYS primarily processes cardholder accounts for customers issuing VISA, VISA Gold, MasterCard, and MasterCard Gold credit cards; VISA and MasterCard debit cards; cards for automated teller machines; private label cards, including cards issued by various members of the airline and petroleum industries and the telephone equipment industry; corporate cards; cards issued by affinity groups, such as motor clubs, insurance companies, and universities; and for customers extending executive and consumer equity lines of credit.
- Bankcard processing services are provided through a national network of on-line computer terminals and data transmission

equipment. During 1989, this on-line network supported over 11,000 remote CRT terminals located at the facilities of various customers serviced by TSYS.

- TSYS customers can receive on-line credit reports from five major credit bureaus in a common format directly through The Total System, rather than having to communicate separately with each bureau.
- As of December 31, 1989, TSYS provided bankcard processing services to 103 customers located in 33 states, Canada, and Puerto Rico. Customers included 98 financial institutions, two airlines, one telephone equipment company, and two oil companies.
- TSYS processed nearly 600 million cardholder transactions during 1989, compared to 487 million in 1988, and 396 million in 1987.
- In March 1989, The Monogram Bank, a unit of General Electric Capital Corporation, was converted to The Total System. Monogram has become one of TSYS' largest customers.

TSYS offers facilities management services to meet the needs of customers who wish to offer card services but prefer that another organization administer those services.

- Services provided by TSYS include the investigation and approval of credit, customer service to credit cardholders, collection services, accounting, file maintenance, and processing of all cardholder transactions.
- During the fourth quarter of 1989, TSYS began servicing accounts for AT&T Phone Centers. Other facilities management customers include Continental Air Lines, Crown Central Petroleum, Eastern Air Lines, and Fina Oil and Chemical Company.

Bank processing services were provided by TSYS primarily to affiliated banks of Synovus, the parent of CB&T. Services included processing of demand deposits, certificates of deposit, installment loans, commercial loans, and other general banking applications. As previously discussed, these operations were sold to Synovus Data Corp. in January 1990.

Equipment leasing services are provided by Columbus Depot Equipment Company, Inc., a wholly owned subsidiary of TSYS.

Industry Markets

Approximately 8% of TSYS' 1989 revenue was derived from services provided to CB&T and its affiliates and 2% from interest income. Of the remaining 90% of revenue, approximately 92% (\$54.8 million) was derived from the banking and finance industry and 8% (\$4.5 million) was derived from oil companies and airlines.

Geographic Markets

Virtually all of TSYS' 1989 revenue was derived from the U.S. A small amount was derived from Puerto Rico and Canada.

The company's sales office and production centers are located in Columbus.

Computer Hardware and Software

TSYS has the following computers installed in support of its processing services:

- 1 IBM 3090-600E, MVS/XA
- 1 IBM 3090-300E, MVS/XA
- 1 IBM 3084, MVS
- Tandem NonStops

COMPANY PROFILE

TOTAL SYSTEM SERVICES, INC.
1000 Fifth Avenue
P.O. Box 120
Columbus, GA 31902-0120
(404) 649-2387

Richard W. Ussery, President and CEO
Majority Owned Subsidiary of CB&T
Bancshares, Inc.
Total Employees: 425
Total Revenue, Fiscal Year End
12/31/86: \$36,352,517
Noncaptive Computer Services Revenue:
\$32,029,940

THE COMPANY

- Total System Services, Inc. (TSYS) provides bank card and associated processing services to the banking and finance industry. During 1987 the company introduced credit card facilities management processing services for oil companies and airlines.
 - TSYS was formed on January 3, 1983 as a successor to the bank card and general bank data processing operations conducted by the Total System Services Division and the data processing and purchasing departments of CB&T Bancshares, Inc.
 - In August 1983, TSYS issued 520,000 shares of common stock in an initial public offering. TSYS now operates as a 81.6% owned subsidiary of Columbus Bank and Trust Company, which is a wholly owned subsidiary of CB&T Bancshares.
 - TSYS management states that the company is the second largest bank card processing firm in the U.S., currently servicing over 8.7 million accounts.
- TSYS had total 1986 revenue of \$36.4 million, a 28% increase over 1985 revenue of \$28.4 million. Net income rose 21%, from \$4.3 million in 1985 to \$5.2 million in 1986. A five-year financial summary follows:

TOTAL SYSTEM SERVICES, INC.

TOTAL SYSTEM SERVICES, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM	FISCAL YEAR				
	1986	1985	1984	1983	1982 (a)
Revenue	\$ 36,353	\$ 28,354	\$ 20,776	\$ 15,146	\$ 10,220
• Percent increase from previous year	28%	36%	37%	48%	39%
Income before taxes	\$ 10,413	\$ 6,481	\$ 5,588	\$ 3,505	\$ 1,480
• Percent increase from previous year	61%	16%	59%	137%	47%
Net income	\$ 5,238	\$ 4,338	\$ 3,152	\$ 1,985	N/A
• Percent increase from previous year	21%	38%	59%	-	-
Earnings per share (b)	\$ 0.33	\$ 0.27	\$ 0.20	\$ 0.14	N/A
• Percent increase from previous year	22%	35%	43%	-	-

- (a) Financials for 1982 include results of the Total System Services division and processing/purchasing departments of CB&T prior to the formation of TSYS and does not include revenue that would have been received from CB&T or its affiliates.
- (b) Restated to reflect a 2-for-1 stock split in May 1986 and the 3-for-2 stock splits in September 1985 and September 1984.

- TSYS's 1986 noncaptive computer services revenue reached \$32 million, compared to \$25 million in 1985 and \$17.9 million in 1984.
 - TSYS management attributes the growth in noncaptive revenue to increases in bank card processing services. The average number of cardholder accounts processed by TSYS was 7.9 million in 1986, 6.1 million in 1985, and 4.2 million in 1984.
 - The growth in cardholder accounts has resulted from existing bank customers adding to their base of cardholder accounts and from the addition of new customers.
- Revenue for the three months ending March 31, 1987 was \$9.7 million, compared to \$8.4 million for the same period in 1986. Net income reached \$1.4 million, compared to \$1 million for the same period a year ago.

- Factors affecting future growth at TSYS include the following:
 - The Georgia General Assembly has passed legislation providing for the deregulation of credit card interest rates and annual fees. The bill will allow financial institutions complete freedom to set interest rates and charge annual fees based on market conditions. The bill also encourages the establishment of special credit card banks within Georgia provided certain capital and employment requirements are met. The special credit card bank would be required to employ at least 50 people in Georgia, unless they contracted with a Georgia credit card processing company that employs at least 250 people. TSYS currently employs over 400 people in Georgia.
- As of December 31, 1986, TSYS had 425 employees. The company currently has 487 employees.
- The company's major competition for bank card processing services is First Data Resources (a subsidiary of American Express).

KEY PRODUCTS AND SERVICES

- Ninety-eight percent of TSYS's 1986 revenue was derived from processing services provided to the banking and finance industry, including CB&T Bancshares and its affiliates. The remaining 2% of revenue was derived from other income.
- A three-year summary of source of revenue follows:

ITEM	FISCAL YEAR		
	1986	1985	1984
Noncaptive revenue			
• Bank card processing	\$ 31,923	\$ 24,869	\$ 17,835
• Other processing	<u>107</u>	<u>104</u>	<u>98</u>
Subtotal	\$ 32,030	\$ 24,973	\$ 17,933
Captive revenue			
• Bank card processing	\$ 811	\$ 827	\$ 719
• Other processing	\$ 2,917	\$ 2,045	\$ 1,802
Other income	\$ 595	\$ 509	\$ 323
Total	\$ 36,353	\$ 28,354	\$ 20,777

- TSYS provides a complete line of bank card data processing services (The Total System), including card production, international and domestic electronic clearing, cardholder statement preparation, collection information, customer service support, merchant accounting, and management information and reporting to its financial institution customers.

TOTAL SYSTEM SERVICES, INC.

- In its bank card data processing operations, TSYS primarily processes cardholder accounts for its customers issuing Visa, Visa Premium, Mastercard, and Mastercard Gold credit cards, Visa and Mastercard debit cards, cards for automated teller machines, and private label credit cards, and for its customers extending executive and consumer equity lines of credit.
- Bank card processing services are provided through a national network of on-line computer terminals and data transmission equipment. This on-line network supports over 3,500 remote CRT terminals located at the facilities of the various customers serviced by TSYS.
- In 1986, TSYS completed a major rewrite of its accounting system, expanding automated capabilities significantly and allowing all files to be run simultaneously. The new system automatically makes all data routing decisions and monitors all accounting operations. It also automatically generates daily reports to each customer's specifications. In addition, the system offers new on-line options, including immediate verification of individual accounts and batch summaries. These options also include customer service applications, such as chargebacks, retrievals, fund disbursements, and fee collection entries.
- During 1986 TSYS also implemented an automated system of credit scoring. This system allows TSYS to qualify a card applicant for the processing institution and to determine objectively whether the application should be approved or declined. The information on the application is transmitted on-line to TSYS computers, which "score" that data on the basis of customer-defined variables.
- TSYS customers can now receive on-line credit reports from five major credit bureaus in a common format directly through The Total System rather than having to communicate separately with each bureau.
- TSYS runs two separate production operations in addition to the daily reports: one for plastic cards and the other for cardholder statements and notices.
- As of December 31, 1986, TSYS provided bank card data processing services to 83 financial institution customers located in 29 states and Puerto Rico.
- TSYS processed 320 million, 248 million, and 206 million cardholder transactions in 1986, 1985, and 1984, respectively.
- During 1986 TSYS converted NCNB National Bank of North Carolina to the Total System. NCNB is a major issuer of bank cards in the U.S. with approximately 600,000 accounts and is the main subsidiary of the Charlotte-based NCNB Corporation, one of the largest bank holding companies in the South.

TOTAL SYSTEM SERVICES, INC.

- In early 1987 TSYS began offering facilities management processing services through a dedicated credit card center operated by TSYS personnel located in Columbus.
 - These facilities management services will be provided to Crown Central Petroleum, Fina Oil and Chemical Company, and Eastern Air Lines.
 - Services include the investigation and approval of credit, customer service to credit card holders, collection services, accounting, and file maintenance.
 - These new services will be provided by TSYS in addition to its traditional bank card processing services. The customers for which these total credit card management services will be provided own all cardholder account balances. TSYS management states that the facilities management operation represents a natural extension of its business, as well as an entry into markets servicing the oil and airline industries.
- TSYS also provides general processing services to affiliated and unaffiliated banks.
 - Applications supported include general ledger, deposits, and loans (commercial and installments).

INDUSTRY MARKETS

- Virtually 100% of TSYS's 1986 revenue was derived from the banking and finance industry.
 - Approximately 11% of revenue (\$4 million) was derived from NCNB National Bank of North Carolina.
 - Approximately 10% of revenue was derived from CB&T Bancshares.
- Beginning in 1987, TSYS's target markets for its services also includes airlines and oil companies.

GEOGRAPHIC MARKETS

- One hundred percent of TSYS's 1986 revenue was derived from the U.S. and Puerto Rico.
- The company's sales office and production centers are located in Columbus.

COMPUTER HARDWARE AND SOFTWARE

- TSYS has an IBM Sierra 3090, operating under MVS/XA installed at its data center.
- Clients access TSYS's data center via leased lines and Tymnet.



COMPANY HIGHLIGHT

**TRANSCOMM DATA SYSTEMS
INCORPORATED**
1380 Old Freeport Road
Pittsburgh, PA 15238
(412) 963-6770

Alex Burstein, President
Wholly owned subsidiary of
GSI-USA (Generale de Service
Informatique)
Total Employees: 70
Total Revenue, Fiscal Year
End 12/31/81: \$7,000,000*

THE COMPANY

- Transcomm Data Systems Incorporated was founded in 1972 to provide utility computer time on DEC equipment. In 1974, the company began to offer commercial applications for DEC hardware. The company became a subsidiary of GSI in 1977. Transcomm now specializes in designing turnkey systems based on DEC equipment for wholesale distributors, and custom-tailoring its TOLAS (Transcomm On-Line Accounting System) to the needs of specific customers.
- Transcomm's 1981 revenues reached approximately \$7 million, which was a 16% increase over 1980 revenues of \$6 million. The company has had an average annual growth rate of 40% since 1972.
- Major competition for Transcomm's turnkey systems' design comes from Amcor/ARC, Interactive Management Systems, Inc. (IMS), Distribution Management Systems, Inc., and Praxa.

KEY PRODUCTS AND SERVICES

- Transcomm derived approximately 80% of its FY 1981 revenue from the sale of turnkey systems which combine its TOLAS-II software with DEC equipment. The remaining 20% of revenue came from the sale of financial applications software to DEC equipment users.
- TOLAS-II is a proprietary product of Transcomm Data Systems, designed for larger scale DEC PDP-11 and VAX computers to provide distribution control and general accounting applications. Transcomm customizes TOLAS for each installation and specializes in distributed data processing configurations.
 - The system is written in DEC's native BASIC languages and uses Transcomm's File Management System (FMS) for all file processing. It runs under standard DEC RSTS/E and VMS.
 - Of the 14 systems installed in 1981, eight were configured on VAX 780s, four on VAX 750s, and two on PDP 11s.

* INPUT estimate

- TOLAS-II is organized into nine application modules which include:
 - Order entry and invoicing.
 - Inventory management.
 - Purchase order management.
 - Sales analysis.
 - Accounts receivable.
 - Accounts payable.
 - Payroll.
 - Fixed assets.
 - Financial reporting.
- The complete TOLAS-II system is available for license for approximately \$90,000. There are currently over 50 installations of the system.
- Transcomm has separately licensed approximately 150 installations of its TOLAS financial modules as add-on software for DEC users.
- In October 1981, Transcomm announced an Oil and Gas System for DEC PDP 11 equipment which can interface to TOLAS's standard accounting modules. It is designed to control accounting operations of energy producers and will be available early in 1983.

INDUSTRY MARKETS About 80% of Transcomm's fiscal 1981 revenue came from wholesale distributors. The remainder came from various industries including banking and publishing.

GEOGRAPHIC MARKETS

- Eighty percent of Transcomm's revenue is derived from the U.S. and 20% from Canada, New Zealand, and Australia.
- Transcomm's business in Europe is handled by its parent, GSI.

COMPUTER HARDWARE AND SOFTWARE

- Transcomm has the following computers installed at its Pittsburgh data center:
 - 1 DEC PDP 11/23 running under RSTS/E.
 - 1 DEC PDP 11/34 running under RSTS/E.
 - 1 DEC PDP 11/70 running under RSTS/E.
- The company uses leased lines to several customer PDP-11 and VAX systems for additional computer support.

COMPANY PROFILE

TRANSFORM LOGIC CORPORATION

8502 East Via de Ventura
Scottsdale, AZ 85258
(602) 948-2600

Ronald J. Davis, CEO
Public Corporation, OTC
Total Employees: 92
Total Revenue, Fiscal Year End
10/31/87: \$4,827,000

The Company

Transform Logic Corporation, formerly Iconics, Inc., was formed in 1980 and provides application development systems software products and related professional services for IBM mainframe computer users.

- Transform Logic was founded by Garrett P. Melara and operated as a private company until 1983. In 1985 the company changed its name from Iconics, Inc. to Transform Logic Corporation and became a publicly held company.

Fiscal 1987 revenue reached \$4.8 million, a 27% decrease from fiscal 1986 revenue of \$6.6 million. Net losses were 3.9 million for fiscal 1987. A four-year financial summary follows:

**TRANSFORM LOGIC CORPORATION
FOUR-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR			
	10/87	10/86	10/85	10/84
Revenue	\$4,827	\$6,630	\$4,477	\$1,972
• Percent increase (decrease) from previous year	(27%)	48%	127%	N/A
Income (loss) before taxes	\$(3,980)	\$(250)	\$(614)	\$(291)
• Percent increase (decrease) from previous year	*	(59%)	111%	N/A
Net income (loss)	\$(3,980)	\$(250)	\$(614)	\$(291)
• Percent increase (decrease) from previous year	*	(59%)	111%	N/A
Earnings (loss) per share	\$(0.20)	\$(0.01)	\$(0.04)	\$(0.02)
• Percent increase (decrease) from previous year	*	(75%)	100%	N/A

* Percent change exceeds 1,000%

Transform Logic management attributes the financial results in fiscal 1987 to decreases in product license sales, maintenance fees, royalty income, and research and development income.

Transform Logic has one subsidiary located in Scottsdale (AZ). The subsidiary provides product sales, application software services, and customer support services.

During fiscal 1987, the company introduced the application professional services business segment.

- This segment provides development and implementation services for customized applications to its clients.

Revenue for the three months ending January 31, 1988, was \$1.5 million, a 138% increase over \$617,137 for the same period in

fiscal 1987. Net losses for the period were \$605,091 compared to net losses of \$1.2 million for the same period a year ago.

- The company's management attributes increases in revenue and related reduction in net losses to additional sales activity while expenses increased by only 2.5%.

As of October 31, 1987, Transform Logic had approximately 92 employees, segmented as follows:

Marketing and sales	32
Software support and customer services	48
General and administrative	<u>12</u>
	92

Major competitors include Pansophic Systems and Sage Software.

Key Products and Services

Transform Logic derived approximately 73% of its fiscal 1987 revenue from application development systems software products and related services. The remaining 27% was from professional services. A three-year source of revenue summary follows:

**TRANSFORM LOGIC CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ thousands)**

	FISCAL YEAR					
	10/87		10/86		10/85	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software license fees	\$3,217	67%	\$4,669	70%	\$4,186	93%
Royalties	114	2%	324	5%	--	--
Maintenance fees	213	4%	512	8%	85	2%
Research and development contracts	--	--	1,125	17%	206	5%
Application services	1,283	27%	--	--	--	--
TOTAL	\$4,827	100%	\$6,630	100%	\$4,477	100%

Approximately 95% of the company's software revenue was derived from its Transform/IMS and Transform/CICS products. The remaining 5% was from Transform/Batch.

- Transform/IMS is a generator that automates the development and management of application.
 - The product runs in a DB/DC environment.
 - Currently there are 26 systems installed.
- Transform/CICS generates and automates CICS command-level COBOL programs.
 - The product runs in a CICS/DL-1 environment.
 - There are nine systems installed to date.
- Transform/Batch supports and automates CICS and IMS programs.
 - The product runs under any MVS environment.

- During 1987 the company introduced Transform/DBII, a data base management system.

Transform Logic offers professional services through its application services segment. It develops and implements customized application software to clients.

Transform Logic provides customer training, including personal instruction and hands-on experience for its software products.

Industry Markets

Transform Logic derives its revenue from the users of IBM and compatible mainframes. The company's prime targeted market includes Fortune 500 corporations, and the banking and finance and manufacturing industries.

Major clients include Allen Bradley, American Express, Board of Governors, Chevron, Computer Task Group, Milliken and Co., University of Texas, and McDonnell Douglas.

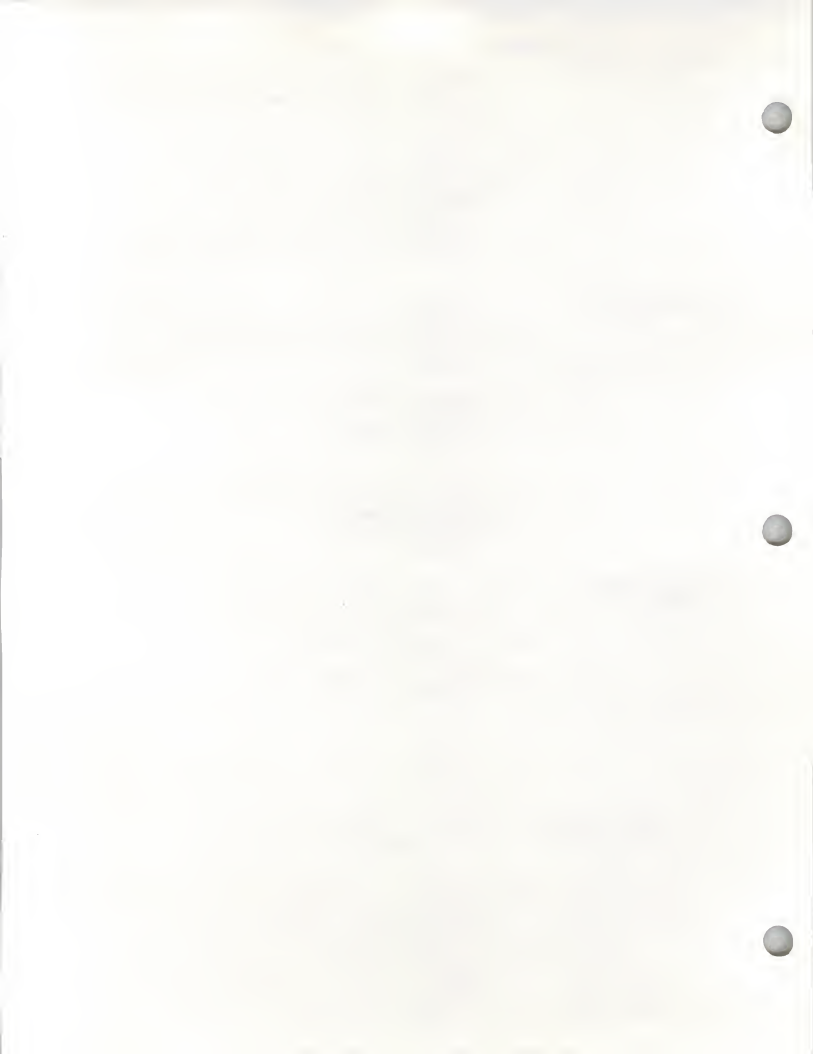
Geographic Markets

Transform Logic derived approximately 93% of its fiscal 1987 revenue from the U.S. and the remaining 7% was from Canada, the U.K., Italy, and Australia.

Hardware and Software

The company has the following mainframes installed at its headquarters in Scottsdale:

- 1 IBM 4331, operating under VM.
- 1 NAS 8053, operating under MVS-KA.



COMPANY BRIEF

Cross Industry: Systems Software

Transform Logic Corporation

8502 East Via de Ventura
Scottsdale, AZ 85258-3220
(602) 948-2600

CEO: Roger Philips, President
Public Corporation, OTC
Founded: 1980

Employees: 80 (10/86)

Revenue (FYE 10/31/85): \$4.5 million; (Nine Months Ending 7/31/86): \$3.9 million

The Company: Develops and markets the Transform family of systems software products for application software development and maintenance

Sources of Revenue:

- Systems Software (100%)

Key Products:

- Systems Software Products (Utilizes IBM mainframes)
 - Transform/IMS
 - Transform (CICS)
 - Transform/Batch

Geographic Markets:

- U.S. and Canada (100%)
- Expanding to international markets in 1986

Significant Events:

- 1985 - Venture capital funding of \$2.4 million
- 1985 - Changed name from Iconics, Inc.
- 1986 - Top management realigned for marketing emphasis
- 1987 - Five new products to be released

December 1986



COMPANY PROFILE

TRANSPORTATION MANAGEMENT TECHNIQUES, INC.

1391 Old Mill Circle
Winston-Salem, NC 27103
(919) 760-7100

Jay C. Paterson, CEO
Private Company
Total Employees: 26 (1/91)
Total Revenue, Fiscal Year End
12/31/90: \$2,500,000

The Company

Transportation Management Techniques, Inc. (TMT), founded in 1981, provides maintenance management software products and turnkey systems for transportation, distribution, construction, and utilities companies requiring equipment maintenance.

TMT operates as an IBM Business Partner, Industry Application Specialist.

TMT's 1990 revenue reached \$2.5 million, a 25% increase over 1989 revenue of approximately \$2 million.

Key Products and Services

Approximately 95% of TMT's revenue is derived from application software products and 5% from turnkey systems.

TRANSMAN is an equipment maintenance management system that controls maintenance expenses for all types of equipment.

- TRANSMAN is available as a software product or turnkey system for IBM System/38 and AS/400 computers, and IBM and compatible microcomputers. It supports Novell, IBM PC Network, and IBM Token Ring network configurations.
- TRANSMAN modules, which are available separately or as an integrated system, include:
 - Maintenance Management
 - Equipment Management
 - Shop Facility Management
 - Preventative Maintenance Scheduling
 - Parts Inventory Management
 - Fuel Cost Management
 - Tire Expense Management
 - Warranty Management

- TRANSMAN software pricing is based on the number of units, number of shop locations, and hardware supported.
 - IBM and compatible microcomputers: TRANSMAN modules range in price from \$995 to \$14,000 and total system (all modules) prices range from \$5,500 to \$50,000.
 - IBM System/38 and AS/400: TRANSMAN software system prices range from \$25,000 to \$65,000.
 - TRANSMAN source code is also available.
- There are currently over 300 TRANSMAN clients and 1,000 users.

TMT also provides enhancements, custom programming, training, on-site installations, and telephone consultations at a negotiated price. Annual maintenance contracts are available for 15% of the software purchase price.

Industry Markets

TMT has clients in the trucking/transportation, distribution, construction, utilities, and city government markets, as well as clients in other industries that have distribution centers and plants that require maintenance.

Clients include American Refuse, AGA Gas, Dobbs International, Driggs Construction, Coca-Cola Bottling, Kraft, Smith Dairy, Florida Mining, Keen Leasing, Hallibarton Services, Schwebel Baking, Armored Transport, Atlanta Beverage, Laidlaws, Pepsi-Cola, American Bakeries, U.S. Trucking, United Truck Lines, Safeway Stores, the City of Grand Junction, the City of Pueblo, Cleveland Public Schools, Diversified Products, The Toronto Star, Central Canada Grocers, K-Mart Stores, and Von's Groceries.

Geographic Markets

Approximately 85% of TMT's revenue is derived from the U.S., 10% from Canada, and the remaining 5% from Europe.

Computer Hardware

TMT has one IBM AS/400 and approximately 25 IBM microcomputers installed at its headquarters. These machines are used for research and development and customer support.

COMPANY PROFILE

TRANSPORTATION MANAGEMENT TECHNIQUES, INC.

1391 Old Mill Circle
Winston-Salem, NC 27103
(919) 760-7100

Jay C. Paterson, CEO
Private Company
Total Employees: 17 (4/89)
Total Revenue, Fiscal Year End
12/31/88: \$2,500,000

The Company

Transportation Management Techniques, Inc. (TMT), founded in 1980, provides maintenance management software products and turnkey systems for transportation, distribution, construction, and utilities companies requiring vehicle maintenance.

TMT operates as an IBM Business Partner, Industry Application Specialist.

TMT's 1988 revenue reached \$2.5 million, a 25% increase over 1987 revenue of approximately \$2 million.

Key Products and Services

Approximately 70% of TMT's revenue is derived from application software products and 30% from turnkey systems.

TRANSMAN is a vehicle maintenance management system that controls maintenance expenses for vehicles.

- TRANSMAN is available as a software product or turnkey system for IBM System 38 and AS-400 computers, and IBM and compatible microcomputers. It supports the Corvus, Novell, IBM PC Network, and IBM Token Ring network configurations.
- TRANSMAN modules, which are available separately or as an integrated system, include:
 - Preventative Maintenance Scheduling
 - Parts Inventory Management
 - Fuel Cost Management
 - Tire Expense Management
 - Warranty Management
- TRANSMAN software pricing is based on the number of vehicles, number of client locations, and hardware supported.

- IBM and compatible microcomputers: TRANSMAN modules range in price from \$500 to \$14,000 and total system (all modules) prices range from \$5,500 to \$50,000.
- IBM System 38 and AS/400: TRANSMAN software system prices range from \$25,000 to \$50,000.
- TRANSMAN source code is also available.
- There are currently over 300 TRANSMAN clients.

TMT also provides enhancements, custom programming, training, on-site installations, and telephone consultations at a negotiated price. Annual maintenance contracts are available for 15% of the software purchase price.

Industry Markets

TMT has clients in the trucking/transportation, distribution, construction, utilities, and city government markets, as well as clients in other industries that have fleets that require maintenance.

Clients include Pepsi-Cola, American Bakeries, U.S. Trucking, United Truck Lines, Brink's Inc., Safeway Stores, the City of Grand Junction, the City of Pueblo, Cleveland Public Schools, Diversified Products, Thrifty Car Rental, The Toronto Star, Central Canada Grocers, K-Mart Stores, and Von's Groceries.

Geographic Markets

Approximately 85% of TMT's revenue is derived from the U.S. The remaining 15% is derived primarily from Canada.

Computer Hardware

TMT has one IBM AS/400 and approximately 12 IBM microcomputers installed at its headquarters. These machines are used for research and development and customer support.

COMPANY BRIEF

Primary Industry-Specific Market: Transportation

Transportation Management Techniques Inc.

1391 Old Mill Circle
Winston-Salem, NC 27103
(919) 765-1498

CEO: J. C. Paterson
Private Company
Founded: 1980

Employees: 8 (12/86)
Revenue (FYE 12/31/86): \$500,000*

The Company: Transportation Management Techniques Inc. provides an application software product and turnkey system for transportation and other companies requiring vehicle maintenance. The company operates as an IBM value-added dealer (VAD)

Sources of Revenue:

- Application Software (50%)
- Turnkey Systems (50%)

Key Products and Services:

- Application Software (Utilizes IBM PC XTs and ATs)
 - TRANSMAN is a system for controlling maintenance expenses for vehicles. It includes the following modules:
 - Preventive maintenance scheduling
 - Parts inventory management
 - Fuel cost management
 - Tire expense management
- Turnkey Systems (Utilizes IBM PC XTs and ATs)
 - Transportation Management Techniques provides the TRANSMAN application as a turnkey system by installing it on IBM PC XTs and ATs

Target Industries:

- Transportation
- All others requiring vehicle maintenance

Geographic Markets:

- U.S. (85)%
- Non-U.S. (15%)
- Direct sales (100%)

*INPUT estimate

December 1986

Other:

- The company is developing a new warranty module which will be used to increase the recovery of warranty expenses
- A new version of the software will soon be available for the IBM System/38

December 1986

COMPANY BRIEF

Primary Industry-Specific Market: Transportation

Trans Tech Services, Inc.

4309 Hacienda Drive
Pleasanton, CA 94566
(415) 463-1400

CEO: Larry Woon, President
Private Company
Founded: 1983

Employees: 40 (12/85)
Revenue (FYE 12/31/85): \$3 million*

The Company: Trans Tech Services provides turnkey systems, software products, and associated support services to the transportation industry.

Sources of Revenue:

- Turnkey Systems (90%)
- Application Software (5%)
- Professional Services (5%)

Key Products and Services:

- Turnkey Systems and Application Software Products (Utilizes Apollo mini-computers)
 - Trans Tech Services provides operations planning and control systems for the transportation industry and private carriers.
 - The ROUTE/Control system is designed to help private fleets plan and control daily operations, reduce operating costs, and increase labor efficiency and equipment utilization. The system includes workstations, a routing and scheduling process, and a computer-generated road map of the service territory.
 - The ROUTE/Control system is based on Trans Tech's DISPATCH/Control System, designed for the common carrier industry. The system enables management to plan and control the daily functions of delivery operations, customer service, delivery routing and scheduling, and communication with drivers.

Target Industries:

- Transportation (100%)

Other:

- With 20% equity, TRW is the largest shareholder of the company

*INPUT estimate

October 1986



COMPANY PROFILE

TRAX SOFTWARES, INC.

10801 National Boulevard
Los Angeles, CA 90064-4126
(213) 475-8729

Len Fischer, President
Private Corporation
Total Employees: 26
Total Revenue, Fiscal Year End
1/31/89: \$2,000,000

The Company

Trax Softworks, Inc., established in 1981, specializes in personal productivity tools for end users of corporate mainframe facilities. Trax software supports IBM's 370 architecture, as well as the 3270-type IBM terminals in the VM/CMS, TSO (MVS and MVS/XA), CICS (DOS and MVS), and ADR/ROSCOE environments.

Total fiscal 1989 revenue reached \$2 million, an 11% increase over fiscal 1988 revenue of \$1.8 million.

As of January 1989, Trax had approximately 26 employees, segmented as follows:

Marketing and sales	6
Customer support	7
Research and development	7
Computer operations	1
General and administrative	5
	26

Trax Softwork's major competitors include Tower Systems, Dynasoft, On-Line Software, and Computer Associates.

Key Products and Services

Approximately 93% of Trax Softworks' fiscal 1989 revenue was derived from software products and 7% from professional services.

Trax Softworks' software is compatible with the following environments: IBM 370, 30XX, 43XX, 9370, TSO (MVS and MVS/XA), VM/CMS, CICS (DOS and MVS), and ADR/ROSCOE. Products include the following:

- ESS^R, released in 1983, is a decision support tool featuring interactive 3-D spreadsheets, Lotus compatibility, mainframe file access, graphics support, and macro processing.

- There are currently 500 installations of ESS, and it can be purchased for a one-time fee of \$9,000 to \$16,000. Leasing is available starting at \$3,750 to \$6,500 per year.
- EdWord[®], released in 1986, is a "what-you-see-is-what-you-get" word processor. It can function as a standalone system or be integrated with the ESS spreadsheet.
 - There are currently 45 installations of EdWord, and it can be purchased for a one-time fee of \$6,500 to \$11,500. Leasing is available starting at \$2,500 to \$4,500 per year. Maintenance fees are 15% of purchase price per year.
- TopNotch[®], released in 1988, is a desktop manager for IBM mainframes accessible from other applications. Features include spreadpad, appointment calendar, index card file, notepad, and toolbox. The clipboard feature allows for cutting and pasting data between applications.
 - There are currently three installations of TopNotch, which is priced between \$8,000 and \$15,000. Leasing is available for \$3,200 to \$6,000 per year. Maintenance fees are 15% of purchase price per year.
- VM DialOut[™], formerly TSF (Terminal Simulation Facility) released in 1982, allows local and remote 3270 terminals to emulate ASCII terminals for access to public data bases, electronic mail gateways, and networks. VM DialOut can also function as a fax machine and can send and receive telexes via Western Union's EZLINK. VM DialOut has a VT-100 emulation option.
 - There are currently 50 installations of VM DialOut, which can be purchased for a one-time price of \$9,000 to \$15,000. Leasing is available at \$3,750 to \$6,500 per year. Maintenance fees are 15% of purchase price per year.
- TieLine, released in 1983, is a file transfer system designed to transfer data between an Apple II and IBM PC or XT. No communications adapter or serial interface is required. TieLine also checks for errors during file transfer.
 - There are currently 400 installations of TieLine, which is available for a one-time fee of \$395 to \$495.

Trax Softworks provides other services, as follows:

- Training for its customers on a regular basis. Classes are held either at Trax headquarters or at the client site.
- A help desk hotline and quarterly newsletter.
- The Trax User Group (TUG) is composed of Trax software customers. Services include a quarterly newsletter and a user conference.

Industry Markets

Trax Softworks markets its products cross-industry, including insurance, retail, manufacturing, utilities, publishers, state and local government, federal government, transportation, entertainment, universities, and aerospace.

Geographic Markets

Approximately 90% of Trax Softworks' fiscal 1989 revenue was derived from the U.S. and the remaining 10% from Europe, the Middle East, and South America.

Trax Softworks has distributors in Europe, the Middle East, and South America.

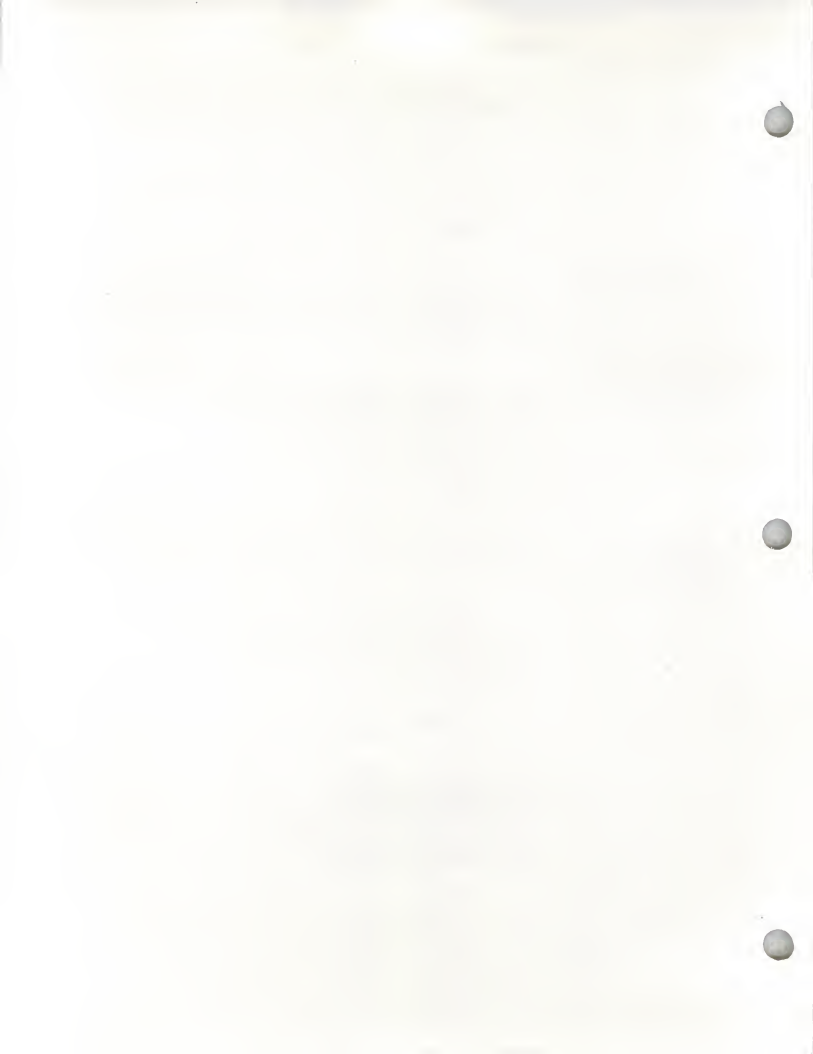
Computer Hardware and Software

Trax Softworks has the following hardware installed at its headquarters:

- 1 IBM 4341, Model 2 mainframe, operating under VM/CMS with TSO (MVS and MVS/XA) AND CICS (DOS).
- 60 IBM terminals, including 3270s, 3178s, and 3180s.
- 3 IBM PCs.
- 5 Macintoshes.

Trax Softworks has the following software installed:

- TopNotch, desktop management system.
- EdWord, word processor.
- ESS, electronic spreadsheet.
- VM DialOut, dialout communications.
- GDDM, IBM's graphics support.
- Script, IBM's word processor.



COMPANY HIGHLIGHT

TRES COMPUTER SYSTEMS, INC.
4255 LBJ Freeway, Suite 220
Dallas, TX 75234
(214) 233-4341

Orren Y. Evans, Chairman and
President
Private Corporation
Total Employees: 213
Total Revenue, Fiscal Year End
3/31/82: \$12,563,840

THE COMPANY

- TRES Computer Systems was founded in 1969 to provide EDP consulting for the utilities industry. A customer billing system designed for a utilities client was the basis for TRES's first software product, introduced in 1970. In the late 1970s, the company began providing professional services and software products to non-utilities firms and currently derives half of its revenue from these customers.
- Fiscal 1982 revenue was \$12.6 million, a 57% increase over 1981 revenue of \$8 million. Fiscal 1982 net income was \$902,000, a 52% increase over 1981 net income of \$592,000. A five-year financial summary follows.

TRES COMPUTER SYSTEMS, INC.

TRES COMPUTER SYSTEMS
FIVE-YEAR FINANCIAL SUMMARY(a)
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/82	3/81	3/80	3/79	3/78
Revenue	\$12,564	\$ 7,990	\$ 5,931	\$ 4,999	\$ 5,277
• Percent increase (decrease) from previous year	57%	35%	19%	(5%)	46%
Income (loss) before taxes	\$ 1,447	\$ 968	\$ (288)	\$ (594)	\$ 841
• Percent increase (decrease) from previous year	49%	436%	52%	(171%)	55%
Net income (loss)	\$ 902	\$ 592	\$ (190)	\$ (286)	\$ 469
• Percent increase (decrease) from previous year	52%	412%	34%	(161%)	54%
Earnings (loss) per share	\$ 0.26	\$ 0.18	\$ (0.06)	\$ (0.09)	\$ 0.15
• Percent increase (decrease) from previous year	44%	400%	33%	(160%)	50%

- (a) Financial data has been restated to comply with the Financial Accounting Standards Board's requirement for accounting on the accrual basis for compensated employee absences.
- Research and development expenditures of approximately \$4 million per year in fiscal 1979 and 1980 resulted in losses for those years.
 - TRES spent about \$2 million, or 16% of total revenue, on research and development in fiscal 1982.
 - The company is divided into three operating units.
 - Marketable Systems provides software products and support services, primarily in the areas of customer information management, materials management, and payroll/personnel.
 - Information Services provides clients with batch and on-line processing.
 - Production of Systems and Services supports the other units by supplying software maintenance, enhancements, and customization to clients, as well as training TRES personnel.

TRES COMPUTER SYSTEMS, INC.

- Employees are segmented as follows:

Marketing/sales	12
Software services/customer support	90
Product development	51
Computer operations	17
General and administrative	<u>43</u>
	213

- Major competitors, listed by product area, include:
 - Materials management: Walker Interactive Products, Martin Marietta, MCAUTO, and American Software.
 - Payroll/personnel: Management Science America, Information Science, Genesys Software Systems, McCormack & Dodge, Integral Systems, and Cyborg Systems.
 - Customer information: Western Data Company and Network Computing Corporation.

KEY PRODUCTS AND SERVICES

- Software package revenue increased 306% from \$1.9 million in fiscal 1981 to \$5.9 million in fiscal 1982. Company revenue during the past two fiscal years was derived as follows (\$ thousands):

ITEM	FYE 3/82	Percent of Total	FYE 3/81	Percent of Total
Software products	\$ 5,926	47%	\$1,937	24%
Professional services	6,205	50	5,918	74
Processing services	133	1	-	-
Interest and other income	<u>300</u>	<u>2</u>	<u>135</u>	<u>2</u>
TOTAL	\$12,564	100%	\$7,990	100%

- TRES began offering processing services in April 1981. The company expects service bureau operations to generate an increasing percentage of revenue in the future, particularly with the company's expansion into larger facilities later in 1982.
- TRES software products are usually customized to meet the needs of the client. Modifications are often extensive, and are charged in addition to

TRES COMPUTER SYSTEMS, INC.

license fees. Customization, installation, implementation assistance, training, and other product-related consulting account for 50% of the firm's total fiscal 1982 revenue.

- TRES products run on IBM and plug-compatible mainframes. The Customer Information System also runs on Honeywell and Univac mainframes.
- Customer Information System (CIS) maintains customer information for electric, gas, steam, water, and sanitation utilities. CIS was TRES's first product, introduced in 1970, and is the company's major source of revenue. The package received the ICP \$25 million award in 1981.
 - Daily processing of customer records runs in batch mode. On-line data entry and inquiry are provided.
 - CIS is perpetually licensed for \$85,000 to \$150,000. There are 36 installations, including the Los Angeles Department of Water and Power, Allegheny Power Service Corporation, and Canadian Utilities, Ltd.
 - Planned enhancements will make CIS capabilities available to non-utilities companies, as well as providing interfaces between CIS and other TRES products.
- Materials Management System (MMS) was introduced in 1972. An updated version, MMS-II, was introduced in 1977. The product facilitates materials planning, scheduling, procurement, and control, and is used primarily by the mining, manufacturing, utilities, and construction industries. MMS-II received the ICP \$10 million award in 1981.
 - Available in batch or on-line versions, MMS-II consists of four modules.
 - Materials Forecasting/Planned Requirements, licenses for \$108,000 on-line or \$73,000 batch.
 - Stores Control (inventory control), \$106,000 on-line or \$75,000 batch.
 - Purchasing, \$96,000 on-line or \$60,000 batch.
 - Accounts Payable, \$64,000 on-line or \$43,000 batch.
 - The total system, which includes all four modules, is priced at \$209,000 for the batch version and \$290,000 for the on-line version.
 - There are 30 installations of MMS, including Phelps Dodge Corporation, Southwestern Public Service Company, and Anaconda Company.
- Materials Forecasting and Inventory Control System (MFICS) is a version of the Materials Management System designed for smaller businesses. Introduced in 1982, the product is offered in an on-line version only, and is priced at \$100,000.

TRES COMPUTER SYSTEMS, INC.

- Employee Information System (EIS), introduced in 1976, supports human resource management. The product received the ICP \$5 million award in 1981.
 - Functions include:
 - Payroll.
 - Personnel administration.
 - Benefits maintenance.
 - Labor relations.
 - Manpower planning.
 - Government regulation compliance.
 - EIS functions in batch mode and offers an on-line option for data entry and inquiry.
 - In fiscal 1982 Canadian and IMS data base/data communications versions of the payroll system were introduced.
 - EIS prices range from \$75,000 to \$175,000. There are 41 installations, including Montana Power Company, GTE Automatic Electric, and Brown and Williamson Tobacco Company.
- CIS, MMS, and EIS account for about 85% of TRES's software revenue, and are the focus of the company's marketing efforts. Remaining software revenue is derived from the following products:
 - Fuels Management Information System is designed for the utilities industry, and includes fuels inventory, purchasing, accounting, and testing modules. TRES's most recent product, it was developed in conjunction with Allegheny Power Service Corporation.
 - Distribution Facilities Management is a data base management system for utilities distribution plants. It was developed by Texas Utilities Company, and is licensed by TRES.
 - Construction Management System evaluates requirements for manpower, material, equipment, and other resources used in construction projects, and monitors their use.
 - Accounts Payable System includes liability control and cash disbursement.
- Products include one year of free maintenance. Subsequent maintenance is currently quoted at 10% of the original license fee per year.
- Financial Management System is a general ledger package recently developed by TRES. The company expects to begin actively marketing the product later this year.

TRES COMPUTER SYSTEMS, INC.

- Information Services Group offers all TRES products as applications on its processing network. Accounting and business applications developed by other vendors are also available, as well as general timesharing services.

INDUSTRY MARKETS

- Revenue is derived as follows:

Utilities	50%
Telecommunications	5%
Mining	15%
Banking and finance	5%
Petrochemical	10%
Food processing	5%
Other manufacturing	<u>10%</u>
	100%

GEOGRAPHIC MARKETS

- Domestic sales contributed 80% of fiscal 1982 revenue and Canadian sales 15%. The remaining 5% was from Saudi Arabia. TRES has previously done business in Europe, Venezuela, and Hong Kong.
- TRES conducts all of its business from its Dallas headquarters.

COMPUTER HARDWARE AND SOFTWARE

- TRES maintains the following equipment:
 - 1 NAS 3000, DOS/VSE.
 - 1 Amdahl 470 Series, MVS/STL.

(Jack Keen)

Dropped

COMPANY HIGHLIGHT

TRES COMPUTER SYSTEMS, INC.
Suite 220
4255 LBJ Freeway
Dallas, Texas 75234
(214) 233-4341

↓
Orren Y. Evans, President
Private corporation: 60% owned
by employees
Computer services employees: 75
Total company sales, fiscal year
end 3/77: estimated to be
\$3,500,000

COMPANY BACKGROUND: Tres was formed in March, 1969, for the purpose of serving the utility industry. Today Tres is the largest firm of its kind specializing in this marketplace.

OVERALL ASSESSMENT:

- Tres has established a solid reputation for utility-related applications software and consulting services. By the end of FY 1977 management will have doubled revenues from the \$1.75 million level of FY 1975.
- The next two years will see an increasing emphasis on software products. The company's goal is to have software products compromise 35% of a \$5.3 million sales rate by the end of FY 1979.
- Tres also plans to expand into processing services in the near future using their proprietary software as the base.
- Throughout its history Tres has demonstrated its ability to effectively compete against the enormous resources of IBM as well as the Big Eight accounting firms. By increasing its focus on utility industry-oriented software products and by entering the processing services business, Tres will be decreasing its dependency on lower margin consulting services while simultaneously enhancing its unique, proprietary software capabilities. Such a strategy could pay significant dividends over the long term.

December/1976

53.1

INPUT

KEY PRODUCTS AND SERVICES:

- Tres sells applications software products, which generate 20% of sales, and consulting services, which generate 80% of sales. Consulting services primarily support software product customers and typically involve feasibility studies, education, training, and software customizing.
- Tres best selling software products are:
 - CUSTOMER INFORMATION SYSTEM, marketed primarily to the utility industry. Tres has 11 systems installed. Prices range from \$95K to \$160K, plus related consulting charges.
 - MATERIALS MANAGEMENT SYSTEM, which includes purchasing, accounts payable, inventory control and forecasting functions. Eleven systems have been installed at prices ranging from \$18K to \$100K, plus additional charges for consulting.
 - EMPLOYEE INFORMATION SYSTEM, a cross industry application involving payroll, personnel and labor distribution. Nine complete or partial systems have been sold at a maximum price of \$40K each, plus consulting expenses.

APPLICATIONS: Tres specializes in management-oriented marketing, administrative, accounting and operations applications. All are capable of both batch and on-line functions.

INDUSTRY MARKETS: Ninety percent of the company's revenues are derived from utilities, with most of the remaining 10% coming from state and local governments.

GEOGRAPHIC MARKETS: Tres derives revenues from customers located throughout the continental United States as well as in Alaska, Caracas and Hong Kong. All Tres employees are based in Dallas.

COMPUTER HARDWARE AND SOFTWARE: Tres uses an on-site terminal connected to an outside firm's computer for test time requirements.

COMPANY PROFILE

TRIAD SYSTEMS CORPORATION

3055 Triad Drive
Livermore, CA 94550
(510) 449-0606

William W. Stevens, Chairman
James R. Porter, President and CEO
Public Corporation, NASDAQ
Total Employees: 1,356 (9/91)
Total Revenue, Fiscal Year End
9/30/91: \$137,519,000

The Company

Triad Systems Corporation, founded in 1972, designs, develops, manufactures, markets, and supports turnkey systems in two vertical markets: the automotive parts aftermarket and retail hardgoods dealers.

- The company also provides automotive parts pricing and catalog updating data base electronic information services through its Information Services Division, Triad's fastest growing unit.
- Triad provides lease financing to its turnkey system clients through its wholly owned subsidiary, Triad Systems Financial Corporation (formerly TSC Leasing Corporation).
- The company continues to support, but no longer actively markets, its turnkey systems for dental practices.

Triad has recently made two acquisitions that allow Triad to expand its client base and extend its electronic information services to a greater number of automotive wholesalers.

- In January 1992, Triad announced the acquisition of certain assets of Ultimate Inventory Solutions (UIS) from the Ultimate Corporation for an undisclosed amount.
- UIS, based in East Hanover (NJ), provides turnkey systems to the automotive aftermarket, specializing in high-volume, multi-location businesses.
- UIS has 55 systems in operation, serving 85 warehouse distributors, and 380 jobber locations.
- In December 1991, Triad acquired loadSTAR Systems of Newton (NJ) for an undisclosed amount. loadSTAR provides turnkey systems to the automotive aftermarket.

- With over 1,000 customers nationwide, loadSTAR had 1991 revenues of about \$3.5 million.
- loadSTAR will operate as a wholly owned subsidiary of Triad.

Triad's fiscal 1991 revenue was \$137.5 million, a 5% decrease from fiscal 1990 revenue of \$144.7 million. Net income also declined, from \$3.6 million in fiscal 1990 to \$2.1 million in fiscal 1991. A five-year financial summary follows:

**TRIAD SYSTEMS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	9/91	9/90	9/89	9/88	9/87
Revenue	\$137.5	\$144.7	\$148.0	\$135.8	\$125.8
• Percent Increase (decrease) from previous year	(5%)	(2%)	9%	8%	4%
Income before taxes and extraordinary credit	\$2.7	\$5.8	\$10.0	\$13.4	\$9.6
• Percent Increase (decrease) from previous year	(a) (53%)	(a) (42%)	(a) (b) (25%)	(a) (39%)	(75%)
Net income	\$2.1	\$3.6	\$5.7	\$8.3	\$6.4
• Percent Increase (decrease) from previous year	(42%)	(37%)	(32%)	29%	102%
Earnings per share	\$0.18	\$0.31	\$0.63	\$0.93	\$0.77
• Percent Increase (decrease) from previous year	(42%)	(51%)	(32%)	21%	88%

- (a) Includes gains of \$580,000, \$5.8 million, \$297,000, and \$0.3 million for fiscal 1991, 1989, 1988, and 1987, respectively, from the sale of land and \$1.0 million for fiscal 1987 from a building sale.
- (b) Includes nonrecurring charges of approximately \$7.4 million related to expenses associated with the defense against a hostile takeover attempt during fiscal 1989.

Triad management attributes fiscal 1991 results primarily to the following:

- Automotive Division revenues declined 27% during fiscal 1991.
- Domestic system sales decreased 28% to \$25.3 million due to weak economic conditions in the automotive aftermarket, which resulted in a significant reduction in capital expenditures by Triad's customers. This particularly affected

upgrade sales, as existing customers deferred system expansion. Revenues were also adversely impacted by a reduction in the number of sales representatives in response to the market conditions.

- International sales declined by 45% to \$4.3 million due to poor economic conditions in Canada and the U.K.
- Warehouse systems revenues were \$2.7 million, a 62% increase over fiscal 1990. Increasing market acceptance of the IBM Micro Channel/370-based systems accounted for the increase, with 16 systems sold in fiscal 1991 compared to six systems sold during fiscal 1990.
- Retail Hardgoods Division revenues increased 8% to \$18.1 million as a result of the UNIX-based Eagle Product family released in the third quarter.
 - The revenue increase was generated by upgrade sales of the Eagle product to 278 existing customers.
 - Sales to new customers were adversely impacted by the recession, although the company expects that increased endorsement of industry automation by the major wholesales will have a favorable impact on system sales as the economy improves.
- Customer services revenues were adversely impacted by the mid-year termination of a third-party services agreement under which Triad provided hardware maintenance services to approximately 330 customers.
- Data base electronic information services revenue rose 19% to \$15.3 million. Electronic Catalog revenue rose 28% to \$10.4 million due to a 12% increase in customers (primarily new Automotive Division Series 12 customers) and a 32% improvement in sales to domestic and Canadian retail distributors. Telepricing revenues rose 4%.
- Product development expenditures were approximately \$7.7 million (6% of revenue) in fiscal 1991, \$8.0 million (6% of revenue) in fiscal 1990, and \$8.5 million (6% of revenue) in fiscal 1989. The company also capitalized approximately \$3.7 million, \$3.7 million, and \$1.8 million in software development costs during fiscal 1991, 1990, and 1989, respectively.
- Interest expenses for fiscal 1991 were \$13.7 million, compared to \$14 million in fiscal 1990.

Revenue for the three months ending December 31, 1991 reached \$34.9 million, a 9% increase over \$32 million for the same period in 1990. Net income was \$334,000, compared to \$84,000 for the same period a year ago.

- Revenue growth was attributed to a 17% increase in data base electronic information services revenue and a resurgence in domestic systems sales during the quarter.

Triad is currently organized into various divisions and subsidiaries, as follows:

- The Automotive Division markets turnkey systems to the automotive parts aftermarket, which includes warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. The company currently has over 8,200 Automotive Division customers, compared to over 6,600 a year ago. The Warehouse unit provides IBM System/370-based turnkey systems to warehouse distributors.
- The Information Services Division provides two proprietary data bases to Triad's Automotive Division customers for automotive parts pricing and catalog updating. This division serves more than 20,000 counter positions.
- The Retail Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, and decorating retailers. The company has over 3,100 customers, compared to 2,200 a year ago.
- The Customer Services Division provides predelivery and installation services, customer training, and hardware maintenance and software support services to its turnkey system clients. The Business Products unit provides computer forms and supplies to Triad customers.
- Triad Systems Financial Corporation purchases Triad systems for lease to third parties under direct financing leases.
 - Triad Financial purchased and leased \$27.3 million, \$30.4 million, and \$27.6 million of Triad equipment during fiscal 1991, 1990, and 1989, respectively.
 - Net income from Triad Financial was approximately \$3.4 million, \$3.1 million, and \$1.9 million for fiscal 1991, 1990, and 1989, respectively.

- Triad also has subsidiaries in the U.K., Canada, and Australia that market certain Automotive and Hardgoods Division products and services.

Key Products and Services

A three-year summary of source of revenue by product/service area follows:

TRIAD SYSTEMS CORPORATION THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR					
	9/91		9/90		9/89	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Turnkey systems (a)						
• Automotive parts systems (b)	\$33.3	24%	\$45.5	31%	\$49.1	33%
• Hardgoods systems	18.1	13%	16.8	12%	20.1	14%
• Dental systems	1.1	1%	1.3	1%	1.4	1%
	\$52.5	38%	\$63.6	44%	\$70.6	48%
Maintenance and support services (c)	\$62.1	45%	\$60.5	42%	\$57.5	39%
Electronic Information services						
• Electronic catalog	\$10.4	8%	\$8.1	6%	\$6.1	4%
• Telepricing	5.0	4%	4.8	3%	3.9	3%
	\$15.4	12%	\$12.9	9%	\$10.0	7%
Leasing	\$7.3	5%	\$7.5	5%	\$9.6	6%
Other	\$0.2	—	\$0.2	—	\$0.3	—
TOTAL	\$137.5	100%	\$144.7	100%	\$148.0	100%

- (a) New system sales were approximately \$23.4 million, \$31.3 million, and \$31.4 million for fiscal 1991, 1990, and 1989, respectively. Sales of hardware and software upgrades and add-ons to Triad's installed base were approximately \$29.1 million, \$32.3 million, and \$39.1 million for fiscal 1991, 1990, and 1989, respectively.
- (b) Includes Warehouse Division sales of \$2.7 million in fiscal 1991 and \$1.7 million in fiscal 1990.
- (c) Includes sales of forms and supplies of \$1.9 million in fiscal 1991 and \$900,000 in fiscal 1990.

As of September 30, 1991, Triad had more than 11,300 customers worldwide.

Automotive Parts Aftermarket:

The automotive parts aftermarket consists of four principal levels of distribution: manufacturers, warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. Manufacturers distribute automotive parts through warehouse distributors to wholesalers and retailers who stock and sell the automobile parts used by auto repair shops and the public.

- Historically, Triad's Automotive Division has sold turnkey systems primarily to mid- to large-sized wholesalers.
- Triad's installed base of wholesaler customers provides a source of recurring revenue through sales of applications software, peripherals, hardware upgrades, data services, and customer support.
- The market has been expanded to include retail chains and smaller wholesalers through the introduction of the LaserCat workstation and the Series 11 and Series 14 systems. However, because of the high level of penetration in the traditional wholesaler market and the lower per-unit cost of systems being sold to smaller wholesalers, Triad does not anticipate any significant growth in revenues from the traditional wholesaler market.

The Series 11, Series 12, and Series 14 product lines (Jobber Systems), successors to Triad's original Series 10 system, are turnkey systems for the wholesaler market. Smaller warehouse distributors may also use these systems with specialized applications software.

- The systems use multiple 8-bit microprocessors, one or more disk storage units, counter/management terminals, and printers for invoicing and reports. The systems are available in several different models to accommodate wholesalers of all sizes.
- Every system is equipped with standard telecommunications software allowing users to exchange purchase orders and pricing and inventory information with suppliers and, in some cases, customers.
- The systems are designed for modular growth. Optional applications available include the following:

- Basic Inventory Management: Inventory management reporting, replenishment ordering, item sales history, on-hand balances, and purchase order control
 - Advanced Inventory Management: Stock level calculation, popularity sales ranking, price labels, price lists, goal planning, and cash flow analysis
 - Invoice Printing: Point-of-sale and order entry
 - Sales and Core Analysis
 - Accounts Receivable
 - General Ledger
 - Accounts Payable
 - Multi-Store
 - Centralized Accounts Receivable
 - TRANSNET: Automatic order transmission capability directly to the manufacturer via GE Information Services' networks
- The Series 14 product line, introduced during fiscal 1989, is targeted to larger wholesalers and smaller warehouse distributors and offers increased processing speed over the Series 12. The Series 11 product line is targeted to smaller clients.
 - The systems generally range in price from \$15,000 to \$75,000 and the average system costs \$21,500.

In 1990, Triad expanded its product line to include the IBM Microchannel/370 Warehouse System designed for midrange warehouse operations.

- Triad also continues to serve the large warehouse market with other products with an IBM 9370-based warehouse system that supports information retrieval, has the potential for a larger number of application enhancements, and offers increased processor speed to serve businesses with high transaction volumes.
- The IBM System/370-based systems generally range in price from \$100,000 to \$300,000, but some configurations are priced in excess of \$1,000,000.

TelePart, introduced in 1987, is a terminal-based system that allows auto service dealers to order automobile parts electronically by communicating directly with a wholesaler's Triad system equipped with the Electronic Catalog product.

- The repair shop can access the wholesaler's Triad system to use the Electronic Catalog to check the availability and list price of parts prior to ordering.
- Triad markets these terminals to auto repair shops through its wholesaler customers.
- As of September 1991, over 2,200 TelePart terminals were installed.

Electronic Information Services:

Triad offers three proprietary remote batch data base services to its wholesaler and retailer customers as follows:

- Telepricing is a data base that provides automatic price updates for automotive parts upon a manufacturer's price change.
 - Telepricing services are available via remote batch or magnetic tape.
 - Telepricing customers pay an initial license fee and a monthly subscription fee ranging from \$53 to \$275.
 - As of the end of fiscal 1991, there were approximately 2,700 Telepricing subscribers, up from 2,600 in fiscal 1990.
- Electronic Catalog is a data base that includes over 1.6 million parts and prices and can provide over 9.6 million automobile parts applications tailored to a wholesaler's inventory.
 - For a given automotive repair, Electronic Catalog identifies all the parts required, together with prices and inventory levels, and prompts the wholesaler to recommend related parts that the customer may need in addition to the part requested.
 - Triad charges a license fee and a monthly subscription fee averaging \$200 for this data base and provides the customer with periodic updates.
 - Electronic Catalog customers are required to subscribe to Telepricing to update the pricing information in the

Electronic Catalog data base, unless the customer has access to an automatic pricing service provided by a Triad national account.

- Electronic Catalog is available for Series 11, 12, and 14 systems. Series 10 users can purchase hardware upgrades to Series 12 systems or can install LaserCat, Triad's CD ROM technology, to access the Electronic Catalog.
- At the end of fiscal 1991, there were 2,866 customers using Electronic Catalog on an Automotive Division system and 2,414 customers using it on a LaserCat workstation.
- Buyer's Guide, released in 1990, is a data base used by wholesalers to assist in making stocking decisions. The data base supplies the make and type of all automobiles that a selected part would fit. As of September 30, 1991 there were approximately 170 customers using the Buyer's Guide.

The LaserCat workstation, introduced during fiscal 1988, uses CD ROM technology to provide access to Triad's Electronic Catalog and Telepricing data bases.

- As of September 30, 1991, over 5,200 LaserCat workstations were installed, compared to 3,600 installed at the end of fiscal 1990.
- During fiscal 1991 and 1990, Triad also introduced the following CD ROM products:
 - LaserGuide™, an inventory management and product-ordering CD ROM workstation
 - LaserCat Connect™, which merges the Electronic Catalog service with point-of-sale software from non-Triad systems
 - LaserCat Plus™, an electronic catalog workstation with invoicing and forwarding capabilities, designed for use by smaller automotive jobbers
 - ColorCat™, which automates the paint color mixing formulas from the product lines of major paint manufacturers
 - ServiceCat™, a workstation product for the service dealer (automobile repair) that combines the Electronic Catalog with a listing of industry-standard labor estimates and rates

Retail Hardgoods:

Triad's Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, and decorating retailers. These retailers are often closely affiliated with cooperatives and distributors that wholesale to this market.

- The systems are based on Triad-manufactured minicomputers that incorporate 16-bit microprocessors.
- Applications available include:
 - Point-of-sale
 - Inventory management
 - Pricing
 - Purchasing
 - Receiving
 - Sales analysis
 - Accounting
 - Bar code scanning
 - Automatic price updating
- These systems range in price from \$13,000 to \$100,000. The average store system costs approximately \$29,000.

The Eagle family of systems, introduced in April 1991, is a UNIX-based, Intel 386/486-driven system designed for the medium- to high-end of the market. The system offers increased power and functionality and provides an avenue for current Triad customers to upgrade.

The PC LaserLine products, also introduced during fiscal 1991, are low-cost systems designed for smaller outlets.

Other hardgoods products include:

- EZ Access™, a special-purpose telecommunications terminal
- An enhanced bar code system for retail hardgoods point-of-sale terminals
- The Triad Entry Level System (TELS), targeted to smaller retailers

There are currently over 3,100 hardgoods system installations, compared to 2,200 a year ago.

In order to facilitate marketing to potential customers, Triad has developed national account relationships with large hardware cooperatives, distributors, and associations to promote the benefits of Triad systems to their retail customers/affiliates.

- During fiscal 1990, Triad introduced an electronic catalog for True Value Hardware customers, Triad's initial CD ROM-based product for this market.

Customer Services:

Triad provides the following services to its clients in conjunction with its turnkey system sales:

- Predelivery services include cost-justification analysis, site planning and preparation, training for management and employees, installation planning, and customer visits to other Triad user sites.
- Zapstart is a service that preloads an individual automotive customer's inventory, pricing, and parts applications data into its Triad system upon installation, saving customers manual data entry time.
 - Hardware retailers that are customers of certain hardware cooperatives or distributors can preload inventory files provided by these cooperatives or distributors.
 - Triad can also deliver a dental system preloaded with the practice's patient files.
- Customer training is available from 35 domestic and nine foreign Triad education centers. During fiscal 1991, over 23,000 individuals were trained. Triad also provided training through the sale of video tutorials and extended customer education. Seminars and workshops are also available.
- Three months of system support are included in the price of a Triad system. Post-sale support is available through a System Support Agreement. The services offered include preventive and remedial maintenance, hardware engineering modifications, dialing system operating support by telephone, and software enhancements.
 - Field engineers and managers work out of 119 domestic and 18 foreign field service offices.
 - The monthly fee due under the support agreement varies with system size and averages \$470.
 - Triad's Priority Support Advice Line gives customers telephone access to personnel able to perform on-line

diagnostics and dispatch a field engineer if on-site service is necessary.

Industry Markets

INPUT estimates that approximately 70% of Triad's fiscal 1991 revenue was derived from the automotive aftermarket, which includes warehouse distributors, auto parts wholesalers, and service dealers. Over 28% of revenue was derived from retail hardgoods dealers.

Triad markets to the automotive and retail hardgoods industries through a 225-person direct sales organization operating from 88 domestic and 17 foreign sales offices as of September 30, 1991.

Geographic Markets

Approximately 93% of Triad's fiscal 1991 revenue was derived from the U.S. The remaining 7% was derived from Canada, Australia, and the U.K. A three-year summary of source of revenue follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	9/91		9/90		9/89	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$127.6	93%	\$132.2	91%	\$135.5	92%
International	9.9	7%	12.5	9%	12.5	8%
TOTAL	\$137.5	100%	\$144.7	100%	\$148.0	100%

Offices are located throughout the U.S. in support of sales and marketing, field services, and training. Triad also has offices in Canada, the U.K., Ireland, and Australia.

- As of September 30, 1991, Triad was leasing sales and service space in 119 cities in the U.S. and 19 foreign sites.
- In early 1992, Triad announced it would establish a data base subsidiary in Longford (Ireland) to create, manage, and distribute Triad's initial data base products for the international automotive market.

**Computer
Hardware**

Triad uses two of its Series 80 systems to update and store pricing data for its Telepricing service. The data is transmitted to client Triad systems via telephone lines on a remote batch basis, generally after hours, or by magnetic tape.

Triad has a DEC VAX-11/780 installed at its headquarters for internal accounting functions.



COMPANY PROFILE

TRIAD SYSTEMS CORPORATION

3055 Triad Drive
Livermore, CA 94550
(415) 449-0606

William W. Stevens, Chairman
James R. Porter, President and CEO
Public Corporation, OTC
Total Employees: 1,407 (9/90)
Total Revenue, Fiscal Year End
9/30/90: \$144,687,000

The Company

Triad Systems Corporation, founded in 1972, designs, develops, manufactures, markets, and supports turnkey systems in three vertical markets: the automotive parts aftermarket, retail hardgoods dealers, and dental. The company also provides automotive parts pricing and catalog updating data base electronic information services.

- Triad also provides lease financing to many of its turnkey system clients through its wholly owned subsidiary, TSC Leasing Corporation.
- In June 1987, Triad began providing on-site third-party maintenance services for Altos Computer's national value-added resellers and their customers.

In August 1989, following a hostile takeover attempt, Triad completed a recapitalization, resulting in the reclassification of outstanding common stock.

- Each share of common stock was exchanged for \$15.00 in cash plus one new share of common stock, par value \$.001.
- During fiscal 1989, the company recorded nonrecurring charges of \$7.4 million related primarily to Triad's successful takeover defense. Expenses incurred in connection with the offer by Volt Information Sciences, Inc. to purchase Triad and the resulting litigation, and costs associated with the preliminary financing of the recapitalization were \$6.5 million.

Fiscal 1990 revenue was \$144.7 million, a 2% decrease from fiscal 1989 revenue of \$148.0 million. Net income declined 37%, from \$5.7 million in fiscal 1989 to \$3.6 million in fiscal 1990. In the five-year summary that follows, revenues prior to fiscal 1989 have been restated to reflect the consolidation of TSC Leasing's operations with Triad's:

**TRIAD SYSTEMS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	9/90	9/89	9/88	9/87	9/86
Revenue	\$144.7	\$148.0	\$135.8	\$125.8	\$121.1
• Percent increase (decrease) from previous year	(2%)	9%	8%	4%	4%
Income (loss) before taxes and extraordinary credit	\$5.8	\$10.0	\$13.4	\$9.6	\$5.5
• Percent increase (decrease) from previous year	(42%)	(a) (b) (25%)	(a) (a) 39%	(a) (a) 75%	163%
Net income (loss)	\$3.4	\$5.7	\$8.3	\$6.4	\$3.2
• Percent increase (decrease) from previous year	(37%)	(32%)	29%	102%	158%
Earnings (loss) per share	\$0.31	\$0.63	\$0.93	\$0.77	\$0.41
• Percent increase (decrease) from previous year	(51%)	(32%)	21%	88%	155%

(a) Includes gains of \$5.8 million, \$297,000, and \$1.3 million for fiscal 1989, 1988, and 1987, respectively, from the sale of land adjacent to the company's new headquarters facility in Livermore and of its former headquarters in Sunnyvale.

(b) Includes nonrecurring charges of approximately \$7.4 million related to expenses associated with the defense against the takeover attempt during fiscal 1989.

Triad management attributes fiscal 1990 results primarily to the following:

- Automotive Division revenues decreased 8%, or \$3.7 million. Sales of Automotive Warehouse systems declined 49% to \$1.7 million. Retail Automotive sales were \$1.2 million in fiscal 1990, a 56% decrease from 2.6 million in fiscal 1989, due to unusually high sales to a major retail automotive chain in fiscal 1989.
- International sales declined by 9% to \$7.8 million due to a sluggish economy in the U.K. Domestic system sales of \$34.9 million were similar to prior years.
- Hardgoods Division revenues declined 16% to \$16.8 million due to a 23% decline in the number of new systems sold,

reflecting an economic downturn in the hardgoods market and turnover in the division's sales force.

- Dental Division sales decreased 7%. During fiscal 1990, the company realigned the division's sales and support organization and strengthened its direct sales and telemarketing areas. Fourth quarter revenues of \$0.4 million were 38% higher than the prior year as a result of a 27% improvement in the number of new systems sold.
- Customer services revenue, reflecting a continued increase in the installed turnkey system base, rose 5%.
- Data base electronic information services revenue rose 29%, or \$2.9 million, due to a 33% increase in Electronic Catalog revenue and a 22% increase in Telepricing revenue.
- Product development expenditures were approximately \$8.0 million (6% of revenue) in fiscal 1990, \$8.5 million (6% of revenue) in fiscal 1989, and \$8.1 million (6% of revenue) in fiscal 1988. The company also capitalized approximately \$3.7 million, \$1.8 million, and \$1.9 million in software development costs during fiscal 1990, 1989, and 1988, respectively.
- Interest expenses for fiscal 1990 were \$14 million compared to \$1.8 million in fiscal 1989. The increase was primarily due to interest associated with the reset notes of \$10.3 million and the reduction in interest income of \$3.5 million as a result of reduced cash balances following the cash payment to stockholders at the recapitalization.

Revenue for the three months ending December 31, 1990 was \$32.0 million, compared to \$33.1 million for the same period in 1989. Net income was \$84,000, compared to \$276,000 for the same period a year ago.

- While services revenues grew by 9% over the same period a year ago, system sales declined 23%, reflecting continued customer concerns due to the domestic economic downturn and uncertainty arising from the Persian Gulf crisis.

Triad is currently organized into five divisions and various subsidiaries, as follows:

- The Automotive Division markets turnkey systems to the automotive parts aftermarket, which includes warehouse distributors, wholesalers (jobbers) and retailers, and auto repair

shops. The company currently has over 6,600 Automotive Division customers, compared to over 6,400 a year ago.

- The Information Services Division provides two proprietary data bases to Triad's Automotive Division customers for automotive parts pricing and catalog updating. Approximately 2,600 of the company's automotive customers subscribe to one or more of these services, compared to 2,200 a year ago.
- The Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, and decorating retailers. The company has over 2,200 customers in this market, compared to 1,900 a year ago.
- The Dental Division markets turnkey systems to dental practices. Triad currently has over 770 dental customers.
- The Customer Services Division provides predelivery and installation services, customer training, and hardware maintenance and software support services to its turnkey system clients. This division also provides third-party maintenance services for Altos Computer's national value-added resellers and their customers.
- TSC Leasing Corporation, a wholly owned subsidiary, purchases Triad systems for lease to third parties under direct financing leases.
 - TSC purchased and leased \$30.4 million, \$27.6 million, and \$28.3 million of Triad equipment during fiscal 1990, 1989, and 1988, respectively.
 - Pretax income from TSC was approximately \$5.0 million, \$3.0 million, and \$3.3 million for fiscal 1990, 1989, and 1988, respectively.
- Triad also has subsidiaries in the U.K., Canada, and Australia that market certain Automotive Division products and services.

Key Products and Services

Approximately 66% of Triad's fiscal 1990 revenue was derived from turnkey systems (44%) and associated maintenance and support services (42%) and 9% from electronic information services. The remaining 5% of revenue was derived from leasing and other services.

A three-year summary of source of revenue by product/service area follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

	FISCAL YEAR					
	9/90		9/89		9/88	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Turnkey systems (a)						
• Automotive parts systems	\$45.5	31%	\$49.1	33%	\$42.3	31%
• Hardgoods systems	16.8	12%	20.1	14%	21.4	16%
• Dental systems	1.3	1%	1.4	1%	1.8	1%
	\$63.6	44%	\$70.6	48%	\$65.5	48%
Maintenance and support services	\$60.5 (b)	42%	\$57.4 (b)	39%	\$54.4 (b)	40%
Electronic information services						
• Electronic catalog	\$8.1	6%	\$6.1	4%	\$3.9	3%
• Telepricing	4.8	3%	3.9	3%	3.4	3%
	\$12.9	9%	\$10.0	7%	7.3	6%
Leasing	\$7.5	5%	\$9.6	6%	\$8.4	6%
Other (c)	\$0.2	--	\$0.4	--	\$0.2	--
TOTAL	\$144.7	100%	\$148.0	100%	\$135.8	100%

- (a) New system sales were approximately \$31.3 million, \$31.4 million, and \$32.9 million for fiscal 1990, 1989, and 1988, respectively. Sales of hardware and software upgrades and add-ons to Triad's installed base were approximately \$32.3 million, \$39.1 million, and \$32.6 million for fiscal 1990, 1989, and 1988, respectively.
- (b) Includes \$808,000, \$734,000, and \$440,000 in third-party maintenance revenue for fiscal 1990, 1989, and 1988, respectively.
- (c) Other revenue is attributed primarily to sales of turnkey systems made by the company's Tire Division. Triad ceased actively marketing to independent tire dealers during fiscal 1986 but continues to support its installed base in this market.

As of September 30, 1990, Triad had more than 10,700 customers worldwide.

Automotive Parts Aftermarket:

The automotive parts aftermarket consists of four principal levels of distribution: manufacturers, warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops.

Manufacturers distribute automotive parts through warehouse distributors to wholesalers and retailers who stock and sell the automobile parts used by auto repair shops and the public.

Historically, Triad's Automotive Division has sold turnkey systems primarily to mid- to large-sized wholesalers. Triad's installed base of wholesaler customers provides a source of recurring revenue through sales of application software, peripherals, hardware upgrades, data services, and customer support.

- During fiscal 1989, Triad began to implement its strategy to expand its automotive market through the introduction of several products and plans to introduce additional new products targeted to retail chains, small jobbers, and auto repair shops. However, because of the high level of penetration in this market and the lower per-unit cost of systems being sold to smaller clients, Triad does not expect any significant growth in revenues from new product sales in the Automotive Division.

The Series 12 product line, successor to Triad's original Series 10 system, was introduced in fiscal 1984. These turnkey systems have been designed for the wholesaler market. Smaller warehouse distributors may also use these systems with specialized application software.

- Series 12 systems use multiple 8-bit microprocessors, one or more disk storage units, counter/management terminals, and printers for invoicing and reports. The systems are available in several different models to accommodate wholesalers of all sizes.
- Every system is equipped with standard telecommunications software allowing users to exchange purchase orders and pricing and inventory information with suppliers and, in some cases, customers.
- The systems are designed for modular growth. Optional applications available include the following:
 - Basic Inventory Management: Inventory management, reporting, replenishment ordering, item sales history, on-hand balances, and purchase order control.
 - Advanced Inventory Management: Stock level calculation, popularity sales ranking, price labels, price lists, goal planning, and cash flow analysis.
 - Invoice Printing: Point-of-sale and order entry

- Sales and Core Analysis
- Accounts Receivable
- General Ledger
- Accounts Payable
- Multi-Store
- Centralized Accounts Receivable
- TRANSNET: Automatic order transmission capability directly to the manufacturer via GE Information Services' networks

During fiscal 1989, Triad also introduced the Series 14 product line, which is targeted to larger wholesalers and smaller warehouse distributors and offers increased processing speed over the Series 12; and the Series 11 product line, which is targeted to smaller clients.

The Series 80 Warehouse Distributor System, introduced in 1980, is based on IBM S/370 computers and is designed for larger warehouse operations. Over 55 Series 80 systems are currently installed.

- An IBM 9370-based warehouse system was introduced in 1988 to replace the Series 80 product. The system supports information retrieval and has the potential for a larger number of application enhancements. Pricing generally ranges from \$200,000 to \$300,000.
- During fiscal 1990, Triad expanded its product line to include the IBM Microchannel/370 Warehouse System designed to service midrange warehouse operations.

TelePart, introduced in 1987, is a terminal-based system that allows an auto service dealer to order automobile parts electronically by communicating directly with a wholesaler's Triad system.

- The repair shop can access the wholesaler's Triad system to use the Electronic Catalog to check the availability and list price of parts prior to ordering.
- Triad markets these terminals to auto repair shops through its wholesaler customers.

- As of September 1990, over 2,480 TelePart terminals were installed, compared to 1,700 installations at the end of fiscal 1989.

Triad offers three proprietary remote batch data base services to its wholesaler and retailer customers as follows:

- Telepricing is a data base that provides automatic price updates for automotive parts upon a manufacturer's price change.
 - Telepricing services are available via remote batch or magnetic tape.
 - Telepricing customers pay an initial license fee and a monthly subscription fee ranging from \$53 to \$275.
 - As of the end of fiscal 1990, there were approximately 2,600 Telepricing subscribers, up from 2,375 in fiscal 1989.
- Electronic Catalog is a data base that includes over 1.3 million parts and prices and can provide over 8.8 million automobile parts applications tailored to a wholesaler's inventory.
 - For a given automotive repair, Electronic Catalog identifies all the parts required together with prices and inventory levels and prompts the wholesaler to recommend related parts that the customer may need in addition to the part requested.
 - Triad charges a license fee and a monthly subscription fee averaging \$200 for this data base and provides the customer with periodic updates.
 - Electronic Catalog customers are required to subscribe to Telepricing to update the pricing information in the Electronic Catalog data base, unless the customer has access to an automatic pricing service provided by a Triad national account.
 - Electronic Catalog is available for Series 11, 12, and 14 systems. Series 10 users can purchase hardware upgrades to Series 12 systems or can install LaserCat, Triad's new CD ROM technology, to access the Electronic Catalog.
 - As of September 30, 1990, there were approximately 2,500 Electronic Catalog customers, up from 2,200 for the prior year.

- Buyer's Guide, released in 1990, is a data base used by wholesalers to assist in making stocking decisions. The data base supplies the make and type of all automobiles that a selected part would fit.

The LaserCat workstation, introduced during fiscal 1988, uses CD ROM technology to provide access to Triad's Electronic Catalog and Telepricing data bases. LaserCat features access to more than 1.3 million parts and prices on domestic and import vehicles.

- As of September 30, 1990, approximately 3,600 Lasercat workstations were installed and there are currently over 4,000 installations.
- During fiscal 1990, Triad also introduced the following CD ROM products:
 - LaserGuide™, an inventory management and product-ordering CD ROM workstation
 - LaserCat Connect™, which merges the Electronic Catalog service with point-of-sale software from non-Triad systems
 - LaserCat Plus™, an electronic catalog workstation with invoicing and forwarding capabilities, designed for use by smaller automotive jobbers

Retail Hardgoods:

Triad's Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, and decorating retailers.

- The systems are based on Triad-manufactured minicomputers that incorporate 16-bit microprocessors.
- Applications available include:
 - Point-of-sale
 - Inventory management
 - Pricing
 - Purchasing
 - Receiving
 - Sales analysis
 - Accounting
 - Bar code scanning
 - Automatic price updating

Hardgoods systems range in price from \$13,000 to \$100,000. The average store system costs approximately \$35,000.

During fiscal 1990, Triad introduced EZ Access™, a special purpose telecommunications terminal, and an enhanced bar code system for retail hardgoods point-of-sale terminals.

The Triad Entry Level System (TELS), introduced in fiscal 1989, is targeted to smaller retailers.

There are currently over 2,200 hardgoods system installations, compared to 1,900 a year ago.

In order to facilitate marketing to potential customers, Triad has developed national account relationships with large hardware cooperatives, distributors, and associations to promote the benefits of Triad systems to their retail customers/affiliates. Three of the nation's largest buying cooperatives, Cotter & Company (True Value Hardware and V & S Variety stores), Hardware Wholesalers Inc., and American Hardware, have endorsed Triad systems to their members.

During fiscal 1990, Triad introduced an electronic catalog for True Value Hardware customers, Triad's initial CD ROM-based product for this market.

Dental Systems:

Through the Dental Division, Triad markets practice management turnkey systems to dental practices.

- The systems are based on minicomputers and range in price from \$9,500 to \$56,000, with an average system price of \$12,000.
- Applications supported include receivables, billing, accounting, appointment scheduling, follow-up reminders, insurance processing, word processing, and computer-based training functions.
- During fiscal 1989, Triad introduced the T1000 series system, which offers increased speed, and the T500 for single practitioners. During fiscal 1990, a multiuser system was introduced.

In order to obtain broader industry acceptance for its product line, Triad has endorsements and marketing relationships with major dental associations, including the computer subsidiary of the American Dental Association and California Dental Association.

Customer Services:

Triad provides the following services to its clients in conjunction with its turnkey system sales:

- Predelivery services include cost-justification analysis, site planning and preparation, training for management and employees, installation planning, and customer visits to other Triad user sites.
- Zapstart is a service that preloads an individual automotive customer's inventory, pricing, and parts applications data into its Triad system upon installation, saving customers manual data entry time.
 - Hardware retailers that are customers of certain hardware cooperatives or distributors can preload inventory files provided by these cooperatives or distributors.
 - Triad can also deliver a dental system preloaded with the practice's patient files.
- Customer training is available from 37 domestic and eight foreign Triad education centers. During fiscal 1990, over 25,000 individuals were trained. Triad also provided training through the sale of video tutorials and extended customer education. Seminars and workshops are also available.
- Three months of system support are included in the price of a Triad system. Post-sale support is available through a System Support Agreement. The services offered include preventive and remedial maintenance, hardware engineering modifications, dialing system operating support by telephone, and software enhancements.
 - Field engineers and managers work out of 119 domestic and 20 foreign field service offices.
 - The monthly fee due under the support agreement varies with system size and averages \$450.
 - Triad's Advice Line gives customers telephone access to personnel able to perform on-line diagnostics and dispatch a field engineer if on-site service is necessary.

Industry Markets

Approximately 74% of Triad's fiscal 1990 revenue was derived from the automotive aftermarket, which includes warehouse distributors, auto parts wholesalers, and service dealers. About 24% of revenue was derived from retail hardgoods dealers and 2% from dental practices.

Triad markets to the automotive and retail hardgoods industries through its direct sales organization.

The company markets to private dental practices through a direct sales force, telemarketing, and an independent dealer organization.

Geographic Markets

Approximately 91% of Triad's fiscal 1990 revenue was derived from the U.S. The remaining 9% was derived from Canada, Australia, and the U.K. A three-year summary of source of revenue follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	9/90		9/89		9/88	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$132.2	91%	\$135.5	92%	\$125.2	92%
International	12.5	9%	12.5	8%	10.6	8%
TOTAL	\$144.7	100%	\$148.0	100%	\$135.8	100%

Offices are located throughout the U.S. in support of sales and marketing, field services, and training. Triad also has offices in Canada, the U.K., Ireland, and Australia.

Computer Hardware

Triad uses two of its Series 80 systems to update and store pricing data for its Telepricing service. The data is transmitted to client Triad systems via telephone lines on a remote batch basis, generally after hours, or by magnetic tape.

Triad has a DEC VAX-11/780 installed at its headquarters for internal accounting functions.

COMPANY PROFILE

TRIAD SYSTEMS CORPORATION

3055 Triad Drive
Livermore, CA 94550
(415) 449-0606

William W. Stevens, Chairman
James R. Porter, President and CEO
Public Corporation, OTC
Total Employees: 1,373
Total Revenue, Fiscal Year End
9/30/89: \$147,996,000

The Company

Triad Systems Corporation, founded in 1972, designs, develops, manufactures, markets, and supports turnkey systems in three vertical markets: the automotive parts aftermarket, retail hardgoods dealers, and dentists. The company also provides automotive parts pricing and catalog updating data base electronic information services.

- Triad also provides lease financing to many of its turnkey system clients through its wholly owned subsidiary, TSC Leasing Corporation.
- In June 1987, Triad began providing on-site third-party maintenance services for Altos Computer's national value-added resellers and their customers.

In August 1989, following a hostile takeover attempt, Triad completed a recapitalization, resulting in the reclassification of outstanding common stock.

- Each share of common stock was exchanged for \$15.00 in cash plus one new share of common stock, par value \$.001.
- During fiscal 1989, the company recorded nonrecurring charges of \$7.4 million related primarily to Triad's successful takeover defense. Expenses incurred in connection with an offer by Volt Information Sciences, Inc. to purchase Triad and the resulting litigation, and costs associated with the preliminary financing of the recapitalization were \$6.5 million.

Fiscal 1989 revenue reached \$148 million, a 9% increase over fiscal 1988 revenue of \$135.8 million. Net income declined 32%, from approximately \$8.3 million in fiscal 1988 to \$5.7 million in fiscal 1989. In the five-year summary that follows, revenues prior to fiscal 1989 have been restated to reflect the consolidation of TSC Leasing's operations with Triad's:

**TRIAD SYSTEMS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	9/89	9/88	9/87	9/86	9/85
Revenue	\$147,996	\$135,789	\$125,796	\$121,062	\$115,890
• Percent increase from previous year	9%	8%	4%	4%	(10%)
Income (loss) before taxes and extraordinary credit	\$9,991	\$13,411	\$9,591	\$5,484	\$(8,713)
• Percent increase (decrease) from previous year	(a) (b) (25%)	(a) 39%	(a) 75%	163%	(225%)
Net income (loss)	\$5,695	\$8,315	\$6,427	\$3,181	\$(5,507)
• Percent increase (decrease) from previous year	(32%)	29%	102%	158%	(215%)
Earnings (loss) per share	\$0.63	\$0.93	\$0.77	\$0.41	\$(0.74)
• Percent increase (decrease) from previous year	(32%)	21%	88%	155%	(212%)

- (a) Includes gains of \$5.8 million, \$297,000, and \$1.3 million for fiscal 1989, 1988, and 1987, respectively, from the sale of land adjacent to the company's new headquarters facility in Livermore and of its former headquarters in Sunnyvale.
- (b) Includes nonrecurring charges of approximately \$7.4 million related to expenses associated with the defense against the takeover attempt during fiscal 1989.

Triad management attributes fiscal 1989 results primarily to the following:

- Automotive Division revenues increased 16%, or \$6.8 million. Sales of Automotive Warehouse systems increased by \$2.2 million to \$3.2 million. Retail Automotive sales were \$2.6 million in fiscal 1989, an improvement of \$2.2 million over fiscal 1988.
- International sales increased 19% to \$8.5 million. Domestic new system unit sales increased slightly, but revenues declined 20%, reflecting the 1989 introduction of products designed for the lower end of the market.
- Sales of add-ons and upgrades increased 6% due to the availability of new products, including the new Series 11

system, that enable customers to used Triad's Electronic Catalog and Telepricing services.

- Hardgoods Division revenues declined 6%, reflecting higher-than-planned sales force turnover, an economic downturn in new construction in certain parts of the country, and the impact of unseasonable weather conditions on the businesses of potential customers in certain geographic areas.
- Dental Division sales decreased 25%, with a 35% decline in new system unit sales resulting primarily from fewer trained dealers than in the prior year.
- Customer services revenue, reflecting a continued increase in the installed turnkey system base, rose 6%.
- Data base electronic information services revenue rose 36%, or \$2.7 million, due to a 54% increase in Electronic Catalog revenue and a 15% increase in Telepricing revenue.

Product development expenditures, before software capitalization, were approximately \$8.5 million (6% of revenue) in fiscal 1989, \$8.1 million (6% of revenue) in fiscal 1988, and \$7.2 million (6% of revenue) in fiscal 1987. The company capitalized approximately \$1.8 million, \$1.9 million, and \$1.8 million in software development costs during fiscal 1989, 1988, and 1987, respectively.

Triad is currently organized into five divisions, as follows:

- The Automotive Division markets turnkey systems to the automotive parts aftermarket, which includes warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. The company currently has over 6,400 Automotive Division customers.
- The Information Services Division provides two proprietary data bases to Triad's Automotive Division customers for automotive parts pricing and catalog updating. Approximately 2,200 of the company's automotive customers subscribe to one or more of these services.
- The Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, decorating retailers, and garden centers and retail nurseries. The company has over 1,900 customers in this market.
- The Dental Division markets turnkey systems to dental practices. Triad currently has over 780 dental customers.

- The Customer Services Division provides predelivery and installation services, customer training, and hardware maintenance and software support services to its turnkey system clients. This division also provides third-party maintenance services for Altos Computer's national value-added resellers and their customers.

TSC Leasing Corporation, a wholly owned subsidiary, purchases Triad systems for lease to third parties under direct financing leases.

- TSC purchased and leased \$27.6 million, \$28.3 million, and \$25 million of Triad equipment during fiscal 1989, 1988, and 1987, respectively.
- Pretax income from TSC was approximately \$3.0 million, \$3.3 million, and \$3.1 million for fiscal 1989, 1988, and 1987, respectively.

Triad has subsidiaries in the U.K., Canada, and Australia that market certain Automotive Division products and services.

As of September 31, 1989, Triad had 1,373 full-time employees, segmented as follows:

Marketing/sales	216
Information services	155
Research and development	117
Field engineers/managers	342
Customer support	189
Manufacturing	68
Administration	127
Other	<u>159</u>
	1,373

Key Products and Services

Approximately 48% of Triad's fiscal 1989 revenue was derived from turnkey systems, 39% from associated maintenance and support services, and 7% from electronic information services. The remaining 6% of revenue was derived from leasing and other services.

A three-year summary of source of revenue by product/service area follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

	FISCAL YEAR					
	9/89		9/88		9/87	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Turnkey systems (a)						
• Automotive parts systems	\$49.1	33%	\$42.3	31%	\$39.2	31%
• Hardgoods systems	20.1	14%	21.4	16%	18.5	15%
• Dental systems	1.3	1%	1.8	1%	3.0	2%
	\$70.5	48%	\$65.5	48%	\$60.7	48%
Maintenance and support services	\$57.5 (b)	39%	\$54.4 (b)	40%	\$51.1	41%
Electronic information services	\$10.0	7%	7.3	6%	\$5.1	4%
Leasing	\$9.6	6%	\$8.4	6%	\$8.5	7%
Other (c)	\$0.4	—	\$0.2	—	\$0.4	—
TOTAL	\$148.0	100%	\$135.8	100%	\$125.8	100%

- (a) New system sales were approximately \$31.4 million, \$32.9 million, and \$31.3 million for fiscal 1989, 1988, and 1987, respectively. Sales of hardware and software upgrades and add-ons to Triad's installed base were approximately \$39.1 million, \$32.6 million, and \$29.4 million for fiscal 1989, 1988, and 1987, respectively.
- (b) Includes \$734,000 and \$440,000 in third-party maintenance revenue for fiscal 1989 and 1988, respectively.
- (c) Other revenue is attributed primarily to sales of turnkey systems made by the company's Tire Division. Triad ceased actively marketing to independent tire dealers during fiscal 1986 but continues to support its installed base in this market.

As of September 30, 1989, Triad had more than 9,300 customers worldwide. The company currently services more than 10,000 customers.

The automotive parts aftermarket consists of four principal levels of distribution: manufacturers, warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. Manufacturers distribute automotive parts through warehouse distributors to wholesalers and retailers who stock and sell the automobile parts used by auto repair shops and the public.

- Historically, Triad's Automotive Division has sold turnkey systems primarily to mid- to large-sized wholesalers. Triad's installed base of wholesaler customers provides a source of recurring revenue through sales of application software, peripherals, hardware upgrades, data services, and customer support.
- During fiscal 1989, Triad began to implement its strategy to expand its automotive market through the introduction of several products and plans to introduce additional new products targeted to retail chains, small jobbers, and auto repair shops. However, because of the high level of penetration in this market and the lower per-unit cost of systems being sold to smaller clients, Triad does not expect any significant growth in revenues from new product sales in the Automotive Division.

Triad currently offers the following products and services to the automotive parts aftermarket:

- The Series 12 product line, successor to Triad's original Series 10 system, was introduced in fiscal 1984.
 - These turnkey systems have been designed for the wholesaler market. Smaller warehouse distributors may also use these systems with specialized application software.
 - Series 12 systems use multiple 8-bit microprocessors, one or more disk storage units, counter/management terminals, and printers for invoicing and reports. The systems are available in several different models to accommodate wholesalers of all sizes.
 - Every system is equipped with standard telecommunications software allowing users to exchange purchase orders and pricing and inventory information with suppliers and, in some cases, customers.
 - The systems are designed for modular growth. Optional applications available include the following:
 - Basic Inventory Management: Inventory management reporting, replenishment ordering, item sales history, on-hand balances, and purchase order control.
 - Advanced Inventory Management: Stock level calculation, popularity sales ranking, price labels, price lists, goal planning, and cash flow analysis.

- Invoice Printing: Point-of-sale and order entry.
 - Sales and Core Analysis.
 - Accounts Receivable.
 - General Ledger.
 - Accounts Payable.
 - Multi-Store.
 - Centralized Accounts Receivable.
 - TRANSNET: Automatic order transmission capability directly to the manufacturer via General Electric Information Services Company's networks.
- During fiscal 1989, Triad introduced the Series 14 product line, which is targeted to larger wholesalers and smaller warehouse distributors and offers increased processing speed over the Series 12; and the Series 11 product line, which is targeted to smaller clients.
 - LaserCat, introduced in 1988, is a PC-based version of Triad's Electronic Catalog service using CD-ROM technology. LaserCat features access to more than 1.3 million parts and prices on domestic and import vehicles. There are currently over 2,000 LaserCats in use.
 - The Series 80 Warehouse Distributor System, introduced in 1980, was designed for larger warehouse operations. Over 55 Series 80 systems are currently installed.
 - During fiscal 1988, Triad released a new IBM 9370-based warehouse system to replace the Series 80 product. The new system supports information retrieval and has the potential for a larger number of application enhancements. Pricing generally ranges from \$200,000 to \$300,000. As of September 30, 1989, eight 9370-based systems had been sold.
 - Triad offers two proprietary remote batch data base services to its wholesaler and retailer customers as follows:
 - Telepricing is a data base that provides automatic price updates for automotive parts upon a manufacturer's price change.

- Telepricing services are available via remote batch or magnetic tape.
- Telepricing customers pay an initial license fee and a monthly subscription fee ranging from \$50 to \$265.
- As of the end of 1989, there were approximately 2,375 Telepricing subscribers.
- Electronic Catalog is a data base that includes over 1.3 million parts and prices and can provide over 7.7 million automobile parts applications tailored to a wholesaler's inventory.
 - For a given automotive repair, Electronic Catalog identifies all the parts required together with prices and inventory levels and prompts the wholesaler to recommend related parts that the customer may need in addition to the part requested.
 - Triad charges a license fee and a monthly subscription fee averaging \$200 for this data base and provides the customer with periodic updates.
 - Electronic Catalog customers are required to subscribe to Telepricing to update the pricing information in the Electronic Catalog data base, unless the customer has access to an automatic pricing service provided by a Triad national account.
 - Electronic Catalog is available for Series 11, 12, and 14 systems. Series 10 users can purchase hardware upgrades to Series 12 systems or can install LaserCat, Triad's new CD ROM technology, to access the Electronic Catalog.
 - As of September 30, 1989, approximately 2,200 customers had purchased Electronic Catalog.
- In June 1987, Triad introduced TelePart, a terminal-based system that allows an auto repair shop to order automobile parts electronically by communicating directly with a wholesaler's Triad system.
- The repair shop can access the wholesaler's Triad system to use the Electronic Catalog to check the availability and list price of parts prior to ordering.

- Triad markets these terminals to auto repair shops through its wholesaler customers.
- As of September 1989, over 1,700 TelePart terminals were installed.

Triad's Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, decorating retailers, and garden centers and retail nurseries.

- The systems are based on Triad-manufactured minicomputers that incorporate 16-bit microprocessors.
- During fiscal 1989, Triad also introduced the Triad Entry Level System (TELS) for smaller retailers.
- Applications available include:
 - Point-of-sale
 - Inventory management
 - Pricing
 - Purchasing
 - Receiving
 - Sales analysis
 - Accounting
 - Bar code scanning
 - Automatic price updating
- Hardgoods systems range in price from \$13,000 to \$100,000. The average store system costs approximately \$34,000.
- There are currently over 2,300 installations.
- In order to facilitate marketing to potential customers, Triad has developed national account relationships with large hardware cooperatives, distributors, and associations to promote the benefits of Triad systems to their retail customers/affiliates. Three of the nation's largest buying cooperatives, Cotter & Company (True Value Hardware and V & S Variety stores), Hardware Wholesalers Inc., and American Hardware, have endorsed Triad systems to their members.

Through the Dental Division, Triad markets practice management turnkey systems to dental practices.

- The systems are based on minicomputers and range in price from \$9,000 to \$60,000, with an average system price of \$13,000.

- Applications supported include receivables, billing, appointment scheduling, follow-up reminders, insurance processing, and word processing. During 1988, accounting software and computer-based training functions were added.
- During fiscal 1989, Triad introduced the T1000 series system, which offers increased speed, and the T500 for single practitioners.
- In order to obtain broader industry acceptance for this product line, Triad has solicited endorsements and marketing relationships with major dental associations.

Triad provides the following services to its clients in conjunction with its turnkey system sales:

- Predelivery services include cost-justification analysis, site planning and preparation, training for management and employees, installation planning, and customer visits to other Triad user sites.
- During fiscal 1986, Triad introduced Zapstart, a service that preloads an individual automotive customer's inventory, pricing, and parts applications data into its Triad system upon installation, saving customers manual data entry time.
 - Hardware retailers that are customers of certain hardware cooperatives or distributors can preload inventory files provided by these cooperatives or distributors.
 - Triad can also deliver a dental system preloaded with the practice's patient files.
- Customer training is available from 35 domestic and six foreign Triad education centers.
 - During fiscal 1989, over 30,000 individuals were trained. Triad also provided training through the sale of video tutorials and extended customer education.
 - Seminars and workshops are also available.
- Three months of system support are included in the price of a Triad system. Postsale support is available through a System Support Agreement. The services offered include preventive and remedial maintenance, hardware engineering modifications, dialing system operating support by telephone, and software enhancements.

- Field engineers and managers work out of 122 domestic and 20 foreign field service offices.
- The monthly fee due under the support agreement varies with system size and averages \$500.
- Triad's Advice Line gives customers telephone access to personnel able to perform on-line diagnostics and dispatch a field engineer if on-site service is necessary.

Industry Markets

Approximately 73% of Triad's fiscal 1989 revenue was derived from the automotive aftermarket, which includes warehouse distributors, auto parts wholesalers, and service dealers. About 24% of revenue was derived from retail hardgoods dealers and 3% from dental practices.

- Triad markets to the automotive and retail hardgoods industries through its direct sales organization.
- The company markets to private dental practices through 17 independent dealer organizations.

Geographic Markets

Approximately 92% of Triad's fiscal 1989 revenue was derived from the U.S. The remaining 8% was derived from Canada, Australia, and the U.K.

A three-year summary of source of revenue follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	9/89		9/88		9/87	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$135.5	92%	\$125.2	92%	\$118.2	94%
International	12.5	8%	10.6	8%	7.6	6%
TOTAL	\$148.0	100%	\$135.8	100%	\$125.8	100%

Triad has offices located throughout the U.S. in support of sales and marketing, field services, and training.

The company also has offices in Canada, the U.K., and Australia.

**Computer
Hardware and
Software**

Triad uses two of its Series 80 systems to update and store pricing data for its Telepricing service. The data is transmitted to client Triad systems via telephone lines on a remote batch basis, generally after hours, or by magnetic tape.

Triad has a DEC VAX-11/780 installed at its headquarters for internal accounting functions.

COMPANY PROFILE

TRIAD SYSTEMS CORPORATION

3055 Triad Drive
Livermore, CA 94550
(415) 449-0606

William W. Stevens, Chairman
James R. Porter, President and CEO
Public Corporation, OTC
Total Employees: 1,378
Total Revenue, Fiscal Year End
9/30/88: \$127,410,000

The Company

Triad Systems Corporation, founded in 1972, develops, manufactures, markets, and supports turnkey systems in three vertical markets: the automotive parts aftermarket, retail hardgoods dealers, and dentists. The company also provides automotive parts pricing and catalog updating data base services.

- Triad also provides lease financing to many of its turnkey system clients through it wholly owned, nonconsolidated subsidiary, TSC Leasing Corporation.
- In June 1987 Triad began providing on-site third-party maintenance services for Altos Computer national value-added resellers and their customers.

Fiscal 1988 revenue reached \$127.4 million, a 9% increase over fiscal 1987 revenue of \$117.3 million. Net income rose 29%, from approximately \$6.4 million in fiscal 1987 to over \$8.3 million in fiscal 1988. A five-year financial summary follows:

**TRIAD SYSTEMS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	9/88	9/87	9/86	9/85	9/84
Revenue	\$127,410	\$117,268	\$111,676	\$107,278	\$120,433
• Percent increase (decrease) from previous year	9%	5%	4%	(11%)	33%
Income (loss) before taxes and extraordinary credit	\$13,726	\$9,591	\$5,484	\$(8,713)	\$6,998
• Percent increase (decrease) from previous year	43%	75%	163%	(225%)	161%
Net income (loss)	\$8,315	\$6,427	\$3,181	\$(5,507)	\$4,807
• Percent increase (decrease) from previous year	29%	102%	158%	(215%)	124%
Earnings (loss) per share	\$0.93	\$0.77	\$0.41	\$(0.74)	\$0.66
• Percent increase (decrease) from previous year	21%	88%	155%	(212%)	128%

- (a) Includes gains of \$297,000 and \$590,000 for fiscal 1988 and fiscal 1987, respectively, from the sale of land adjacent to the company's new headquarters facility in Livermore and of its former headquarters in Sunnyvale.
- (b) As a result of the gain described above, during fiscal 1987 Triad recognized an income tax benefit from capital loss carryforwards as an extraordinary credit of \$509,000. Net income in fiscal 1987 before the extraordinary credit, the gain, and a related effective tax rate benefit was approximately \$5.5 million.

Triad management attributes fiscal 1988 results primarily to the following:

- Hardgoods Division revenues rose 15%, or \$2.9 million, reflecting a continuing strong demand for the division's products. Triad also benefited from its joint marketing agreement with Cotter & Company, the nation's largest distributor of hardgoods.
- Automotive Division revenues increased 8%, or \$3.1 million. During the year international sales improved and warehouse system sales more than doubled to over \$1 million due to the release of a new IBM-based product and the sale of two units

during the fourth quarter. Slight increases in domestic sales were attributed to market conditions and competitive pressures.

- Dental Division sales decreased 38%. A lawsuit filed during the year by American Dental Office Systems, Inc. (which was subsequently dismissed) slowed the growth of the dealer network that was begun in late 1987.
- Customer services revenue, reflecting a continued increase in the installed turnkey system base, rose 6%, or \$3.3 million.
- Data base information services revenue rose 42%, or \$2.2 million, due to a 43% increase in the number of subscribers to the Electronic Catalog data base and a 22% increase in Telepricing revenue.

Product development expenditures, before software capitalization, were approximately \$8.1 million (6% of revenue) in fiscal 1988, \$7.2 million (6% of revenue) in fiscal 1987, and \$8.1 million (7% of revenue) in fiscal 1986. The company capitalized approximately \$1.9 million and \$1.8 million in software development costs during fiscal 1988 and fiscal 1987, respectively.

Revenue for the three months ending December 31, 1988 was \$30.1 million, a 2% increase over \$29.6 million for the same period in 1987. Net income for the quarter was \$3.2 million, but includes a \$4 million gain from the sale of land.

In October 1988, Volt Information Sciences, Inc. reportedly acquired a 12.8% stake in Triad Systems.

Triad is currently organized into five divisions, as follows:

- The Automotive Division markets turnkey systems to the automotive parts aftermarket, which includes warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. The company currently has over 5,900 Automotive Division customers.
- The Information Services Division provides two proprietary data bases to Triad's Automotive Division customers for automotive parts pricing and catalog updating. Approximately 2,150 of the company's automotive customers subscribe to one of more of these services.
- The Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market,

decorating retailers, and garden centers and retail nurseries. The company has over 1,700 systems installed in this market.

- The Dental Division markets turnkey systems to dental practices. Triad currently has over 800 dental systems installed.
- The Customer Services Division provides predelivery and installation services, customer training, and hardware maintenance and software support services to its turnkey system clients. This division also provides third-party maintenance services for Altos Computer's national value-added resellers and their customers.

TSC Leasing Corporation, a wholly owned nonconsolidated subsidiary, purchases Triad systems for lease to third parties under direct financing leases.

- TSC purchased and leased \$28.3 million, \$25 million, and \$24.5 million of Triad equipment during fiscal 1988, 1987, and 1986, respectively.
- Triad's investment in TSC is accounted for by the equity method. Income from TSC was approximately \$3.3 million, \$3.1 million, and \$3.9 million for fiscal 1988, 1987, and 1986, respectively.

Triad has subsidiaries in the U.K., Canada, and Australia that market certain Automotive Division products and services.

As of September 31, 1988, Triad had 1,378 full-time employees, segmented as follows:

Marketing/sales	256
Research and development	119
Field engineers/managers	315
Manufacturing	70
Other	<u>618</u>
	1,378

Key Products and Services

Approximately 51% of Triad's fiscal 1988 revenue was derived from turnkey systems, and 43% was derived from associated maintenance and support services. The remaining 6% of revenue was derived from remote batch processing (parts pricing and catalogue data base updating) services.

A three-year summary of source of revenue by product/service area follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

	FISCAL YEAR					
	9/88		9/87		9/86	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Turnkey systems (a)						
• Automotive parts systems	\$42.3	33%	\$39.2	33%	\$42.9	38%
• Hardgoods systems	21.4	17%	18.5	16%	15.3	14%
• Dental systems	1.8	1%	3.0	3%	2.9	2%
	\$65.5	51%	\$60.7	52%	\$61.1	54%
Maintenance and support services	\$54.4 (b)	43%	\$51.1	44%	\$46.6	42%
Processing services	\$7.3	6%	\$5.1	4%	\$3.3	3%
Other (c)	\$0.2	—	\$0.3	—	\$0.7	1%
TOTAL	\$127.4	100%	\$117.2	100%	\$111.7	100%

- (a) New system sales were approximately \$32.9 million, \$31.3 million, and \$31.9 million for fiscal 1988, 1987, and 1986, respectively. Sales of hardware and software upgrades and add-ons to Triad's installed base were approximately \$32.6 million, \$29.4 million, and \$29.2 million for fiscal 1988, 1987, and 1986, respectively.
- (b) Includes \$440,000 in third-party maintenance revenue.
- (c) Other revenue is attributed primarily to sales of turnkey systems made by the company's Tire Division. Triad ceased actively marketing to independent tire dealers during fiscal 1986 but continues to support its installed base in this market.

As of September 30, 1988, a total of over 9,100 Triad systems had been installed worldwide, compared to a total of 8,600 systems installed as of September 30, 1987.

The automotive parts aftermarket consists of four principal levels of distribution: manufacturers, warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. Manufacturers distribute automotive parts through warehouse distributors to wholesalers and retailers who stock and sell the automobile parts used by auto repair shops and the public.

- Historically, Triad's Automotive Division has sold turnkey systems primarily to mid- to large-sized wholesalers. Triad's

installed base of wholesaler customers provides a source of recurring revenue through sales of application software, peripherals, hardware upgrades, data services, and customer support. According to Triad, because of the high level of penetration in this market, the company does not expect any significant growth in revenues from product sales to this market.

- Triad is expanding its market for its new products to include large warehouse distributors, smaller wholesalers, retail chains, and auto repair shops.

Triad currently offers the following products and services to the automotive parts aftermarket:

- The Series 12 product line, successor to Triad's original Series 10 system, was introduced in fiscal 1984. Over 450 smaller warehouse distributors have purchased the Series 12 (or its predecessor).
 - These turnkey systems have been designed for the wholesaler market. Smaller warehouse distributors may also use these systems with specialized application software.
 - Series 12 systems use multiple 8-bit microprocessors, one or more disk storage units, counter/management terminals, and printers for invoicing and reports. The systems are available in several different models to accommodate wholesalers of all sizes.
 - Every system is equipped with standard telecommunications software allowing users to exchange purchase orders and pricing and inventory information with suppliers and, in some cases, customers.
 - The systems are designed for modular growth. Optional applications available include the following:
 - Basic Inventory Management: Inventory management reporting, replenishment ordering, item sales history, on-hand balances, and purchase order control.
 - Advanced Inventory Management: Stock level calculation, popularity sales ranking, price labels, price lists, goal planning, and cash flow analysis.
 - Invoice Printing: Point-of-sale and order entry.

- Sales and Core Analysis.
- Accounts Receivable.
- General Ledger.
- Accounts Payable.
- Multi-Store.
- Centralized Accounts Receivable.
- TRANSNET: Automatic order transmission capability directly to the manufacturer via General Electric Information Services Company's networks.
- Series 12 wholesaler systems generally range in price from \$13,000 to \$100,000.
- The Series 80 Warehouse Distributor System, introduced in 1980, was designed for larger warehouse operations.
 - Over 60 Series 80 systems are currently installed. In late fiscal 1985, Triad experienced reliability problems with the Series 80. These problems significantly reduced sales of warehouse systems during fiscal 1985 and also contributed, together with other market factors, to reduced sales in fiscal 1986.
 - During fiscal 1988, Triad released a new IBM 9370-based warehouse system to replace the Series 80 product. The new system supports information retrieval and has the potential for a larger number of application enhancements. Pricing ranges from \$220,000 to \$1 million. Two systems were sold in 1988.
- Triad offers two proprietary remote batch data base services to its wholesaler and retailer customers as follows:
 - Telepricing is a data base that provides automatic price updates for automotive parts upon a manufacturer's price change.
 - Telepricing services are available via remote batch or magnetic tape.
 - Telepricing customers pay an initial license fee and a monthly subscription fee ranging from \$55 to \$265.

- There are currently approximately 2,200 Telepricing subscribers.
- Electronic Catalog is a data base that includes over 1.3 million parts and prices and can provide over 6.9 million automobile parts applications tailored to a wholesaler's inventory.
- For a given automotive repair, Electronic Catalog identifies all the parts required together with prices and inventory levels and prompts the wholesaler to recommend related parts that the customer may need in addition to the part requested.
- Triad charges a license fee and a monthly subscription fee averaging \$180 for this data base and provides the customer with periodic updates.
- Electronic Catalog customers are required to subscribe to Telepricing to update the pricing information in the Electronic Catalog data base, unless the customer has access to an automatic pricing service provided by a Triad national account.
- Electronic Catalog is available for Series 12 hardware. Series 10 users can purchase hardware upgrades to Series 12 systems or can install LaserCat, Triad's new CD-ROM technology, to access the Electronic Catalog.
- As of September 30, 1988, approximately 1,900 customers had purchased Electronic Catalog.
- In June 1987, Triad introduced TelePart, a terminal-based system that allows an auto repair shop to order automobile parts electronically by communicating directly with a wholesaler's Triad system.
- The repair shop can access the wholesaler's Triad system to use the Electronic Catalog to check the availability and list price of parts prior to ordering.
- Triad markets these terminals to auto repair shops through its wholesaler customers.
- As of September 1988, over 1,100 TelePart terminals were installed.

Triad's Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, decorating retailers, and garden centers and retail nurseries.

- The systems are based on Triad-manufactured minicomputers that incorporate 16-bit microprocessors.
- Applications available include:
 - Point-of-sale.
 - Inventory management.
 - Pricing.
 - Purchasing.
 - Receiving.
 - Sales analysis.
 - Accounting.
- Hardgoods systems range in price from \$13,000 to \$100,000. The average store system costs approximately \$36,000.
- There are currently over 1,700 systems installed.
- In order to facilitate marketing to potential customers, Triad has developed national account relationships with large hardware cooperatives, distributors, and associations to promote the benefits of Triad systems to their retail customers/affiliates. Three of the nation's largest buying cooperatives, Cotter & Company (with 8,000 True Value Hardware and V & S Variety store members), Hardware Wholesalers Inc., and American Hardware, have endorsed Triad systems to their members.
 - Triad also has reached a joint marketing agreement with Cotter & Company for its turnkey systems. Cotter & Company also endorsed Triad's TSC lease-financing subsidiary.

Through the Dental Division, Triad markets practice management turnkey systems to dental practices.

- The systems are based on minicomputers and range in price from \$7,500 to \$35,000, with an average system price of \$15,000.
- Applications supported include receivables, billing, appointment scheduling, follow-up reminders, insurance processing, and word processing. During 1988, accounting software and computer-based training functions were added.

- In order to obtain broader industry acceptance for this product line, Triad has solicited endorsements and marketing relationships with major dental associations.
 - Triad entered into marketing agreements with subsidiaries of the California and Texas Dental Associations in 1985 and a subsidiary of the Ohio Dental Association in 1986. Each of these subsidiaries receives compensation for ongoing marketing services and for the endorsements of Triad products.
 - In 1986 Triad signed a joint marketing and endorsement agreement with a subsidiary of the American Dental Association, American Dental Office Systems, Inc. (ADOSI). Triad has virtually completed conversion of ADOSI system users to Triad software.
- There are currently over 800 dental systems installed, including 285 ADOSI systems converted to Triad software.

Triad provides the following services to its clients in conjunction with its turnkey system sales:

- Predelivery services include cost-justification analysis, site planning and preparation, training for management and employees, installation planning, and customer visits to other Triad user sites.
- During fiscal 1986, Triad introduced Zapstart, a service that preloads an individual automotive customer's inventory, pricing, and parts applications data into its Triad system upon installation, saving customers manual data entry time.
 - Hardware retailers that are customers of certain hardware cooperatives or distributors can preload inventory files provided by these cooperatives or distributors.
 - Triad can also deliver a dental system preloaded with the practice's patient files.
- Customer training is available from 32 domestic and four foreign Triad education centers.
 - During fiscal 1988, over 23,000 individuals were trained. Triad also provided training through the sale of over 4,500 video tutorials and 7,300 hours of extended customer education.

- Seminars and workshops are also available.
- Three months of system support are included in the price of a Triad system. Postsale support is available through a System Support Agreement. The services offered include preventive and remedial maintenance, hardware engineering modifications, and software enhancements.
- Field engineers and managers work out of 127 domestic and 18 foreign field service offices.
- The monthly fee due under the support agreement varies with system size and averages \$500.
- Triad's Advice Line gives customers telephone access to personnel able to perform on-line diagnostics and dispatch a field engineer if on-site service is necessary.

Industry Markets

Triad derived its fiscal 1988 revenue from the automotive parts aftermarket, retail hardgoods dealers, and dental practices.

Triad markets to the automotive and retail hardgoods industries through its direct sales organization.

The company markets to private dental practices through 22 independent dealer organizations.

Geographic Markets

Approximately 92% of Triad's fiscal 1988 revenue was derived from the U.S. The remaining 8% was derived from Canada, Australia, and the U.K.

A three-year summary of source of revenue follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

	FISCAL YEAR					
	9/88		9/87		9/86	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$116.8	92%	\$109.7	94%	\$103.4	93%
International	10.6	8%	7.6	6%	8.3	7%
TOTAL	\$127.4	100%	\$117.3	100%	\$111.7	100%

Triad has approximately 93 offices located throughout the U.S. in support of sales and marketing, field services, and training.

The company also has offices in Canada, the U.K., and Australia.

**Computer
Hardware and
Software**

Triad uses two of its Series 80 systems to update and store pricing data for its telepricing service. The data is transmitted to client Triad systems via telephone lines on a remote batch basis, generally after hours, or by magnetic tape.

Triad has a DEC VAX-11/780 installed at its headquarters for internal accounting functions.

COMPANY PROFILE

TRIAD SYSTEMS CORPORATION

3055 Triad Drive
Livermore, CA 94550
(415) 449-0606

William W. Stevens, Chairman
James R. Porter, President and CEO
Public Corporation, OTC
Total Employees: 1,365
Total Revenue, Fiscal Year End
9/30/87: \$117,268,000

The Company

Triad Systems Corporation, founded in 1972, develops, manufactures, markets, and supports turnkey systems in three vertical markets: the automotive parts aftermarket, retail hardgoods dealers, and dentists. The company also provides automotive parts pricing and catalog updating data base services.

- Triad also provides lease financing to many of its turnkey system clients through it wholly owned, non-consolidated subsidiary, TSC Leasing Corporation.
- In June 1987 Triad began providing on-site third party maintenance services for Altos Computer national value-added resellers and their customers.

Fiscal 1987 revenue reached \$117.3 million, a 5% increase over fiscal 1986 revenue of \$111.7 million. Net income rose 102%, from approximately \$3.2 million in fiscal 1986 to over \$6.4 million in fiscal 1987. A five-year financial summary follows:

**TRIAD SYSTEMS CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	9/87	9/86	9/85	9/84	9/83
Revenue	\$117,268	\$111,676	\$107,278	\$120,433	\$90,831
• Percent increase (decrease) from previous year	5%	4%	11%	33%	10%
Income (loss) before taxes and extraordinary credit	\$9,591	\$5,484	\$(8,713)	\$6,998	\$2,679
• Percent increase (decrease) from previous year	(a) 75%	163%	225%	161%	(42%)
Net income (loss)	\$6,427	\$3,181	\$(5,507)	\$4,807	\$2,142
• Percent increase (decrease) from previous year	(b) 102%	158%	(215%)	124%	(35%)
Earnings (loss) per share	\$0.77	\$0.41	\$(0.74)	\$0.66	\$0.29
• Percent increase (decrease) from previous year	88%	155%	(212%)	128%	(37%)

- (a) Includes a \$590,000 gain from the sale of land adjacent to the company's new headquarters facility in Livermore and of its former headquarters in Sunnyvale.
- (b) As a result of the gain described above, Triad recognized an income tax benefit from capital loss carryforwards as an extraordinary credit of \$509,000. Net income in fiscal 1987 before the extraordinary credit, the gain, and a related effective tax rate benefit was approximately \$5.5 million.

Triad management attributes fiscal 1987 results primarily to the following:

- Hardgoods Division revenues rose 21%, or \$3.2 million, reflecting an increased market demand for the company's products.
- Automotive Division revenues declined 9%, or \$3.7 million, due to a \$1.8 million decrease in warehouse product sales (following Triad's announcement of a new IBM-based product scheduled for release in 1988) and a decline in U.K. sales.
- Dental Division sales increase 3% as Triad reorganized management and expanded its dealer network.

- Customer services revenue, reflecting a continued increase in the installed turnkey system base, rose 10%, or \$4.5 million.
- Data base information services revenue rose 55% or \$1.8 million due to an increased number of subscribers.

Product development expenditures, before software capitalization, were approximately \$9 million (8% of revenue) in fiscal 1987, \$8.1 million (7% of revenue) in fiscal 1986, and \$8.7 million (8% of revenue) in fiscal 1985. For fiscal 1987 the company capitalized approximately \$1.8 million of software development costs.

Revenue for the three months ending December 31, 1987 reached \$29.6 million, a 9% increase over \$27.2 million for the same period in 1986. Net income rose 62%, from \$833,000 to over \$1.3 million.

Triad is currently organized into five divisions as follows:

- The Automotive Division markets turnkey systems to the automotive parts aftermarket, which includes warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. The company currently has over 5,900 Automotive Division customers.
- The Information Services Division provides two proprietary data bases to Triad's Automotive Division customers for automotive parts pricing and catalog updating. Approximately 2,000 of the company's automotive customers subscribe to one of more of these services.
- The Hardgoods Division markets turnkey systems to hardware stores and home centers, the lumber/building materials market, decorating retailers, and garden centers and retail nurseries. The company has over 1,300 systems installed in this market.
- The Dental Division markets turnkey systems to dental practices. Triad currently has over 700 dental systems installed.
- The Customer Services Division provides pre-delivery and installation services, customer training, and hardware maintenance and software support services to its turnkey system clients. This division also provides third party maintenance services for Altos Computer's national value-added resellers and their customers.

TSC Leasing Corporation, a wholly owned nonconsolidated subsidiary, purchases Triad systems for lease to third parties under direct financing leases.

- TSC purchased and leased \$25 million, \$24.5 million, and \$22.3 million of Triad equipment during fiscal 1987, 1986, and 1985, respectively.
- Triad's investment in TSC is accounted for by the equity method. Income from TSC was approximately \$3.1 million, \$3.9 million, and \$5.1 million for fiscal 1987, 1986, and 1985, respectively.

Triad has subsidiaries in the U.K., Canada, and Australia that market certain Automotive Division products and services.

As of September 31, 1987, Triad had 1,365 full-time employees, segmented as follows:

Marketing/sales	257
Research and development	111
Field engineers/managers	327
Manufacturing	65
Other	<u>605</u>
	1,365

Key Products and Services

Approximately 52% of Triad's fiscal 1987 revenue was derived from turnkey systems and 44% was derived from associated maintenance and support services. The remaining 4% of revenue was derived from remote batch processing (parts pricing and catalogue data base updating) services.

A three-year summary of source of revenue by product/service area follows:

TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

	FISCAL YEAR					
	9/87		9/86		9/85	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Turnkey systems (a)						
• Automotive parts systems	\$39.2	33%	\$42.9	38%	\$46.8	44%
• Hardgoods systems	18.5	16%	15.3	14%	14.8	14%
• Dental systems	<u>3.0</u>	<u>3%</u>	<u>2.9</u>	<u>3%</u>	<u>1.7</u>	<u>2%</u>
	\$60.7	52%	\$61.1	55%	\$63.3	59%
Maintenance and support services	\$51.1	44%	\$46.6	42%	\$38.9	36%
Processing services	\$5.1	4%	\$3.3	3%	\$2.2	2%
Other (b)	\$0.3	--	\$0.7	1%	\$1.9	2%
TOTAL	\$117.2	100%	\$111.7	100%	\$107.3	100%

- (a) New system sales were approximately \$31.3 million, \$31.9 million, and \$35.8 million for fiscal 1987, 1986, and 1985, respectively. Sales of hardware and software upgrades and add-ons to Triad's installed base were approximately \$29.4 million, \$29.2 million, and \$27.5 million for fiscal 1987, 1986, and 1985, respectively.
- (b) Other revenue is attributed primarily to sales of turnkey systems made by the company's Tire Division. Triad ceased actively marketing to independent tire dealers during fiscal 1986 but continues to support its installed base in this market.

As of September 30, 1987 a total of over 8,600 Triad systems had been installed worldwide, as follows:

Automotive parts systems	5,900
Hardgoods systems	1,300
Dental systems	700
Tire systems	<u>700</u>
	8,600

The automotive parts aftermarket consists of four principal levels of distribution: manufacturers, warehouse distributors, wholesalers (jobbers) and retailers, and auto repair shops. Manufacturers distribute automotive parts through warehouse distributors to wholesalers and retailers who stock and sell the automobile parts used by auto repair shops and the public.

- Historically, Triad's Automotive Division has sold turnkey systems primarily to mid- to large-sized wholesalers. Triad's installed base of wholesaler customers provides a source of recurring revenue through sales of application software, peripherals, hardware upgrades, data services, and customer support. According to Triad, because of the high level of penetration in this market, the company does not expect any significant growth in revenues from product sales to this market.
- Triad is expanding its market for its new products to include large warehouse distributors, smaller wholesalers, retail chains, and auto repair shops.

Triad currently offers the following products and services to the automotive parts aftermarket:

- The Series 12 product line, successor to Triad's original Series 10 system, was introduced in fiscal 1984. Over 300 smaller warehouse distributors have purchased the Series 12 (or its predecessor).
 - These turnkey systems have been designed for the wholesaler market. Smaller warehouse distributors may also use these systems with specialized application software.
 - Series 12 systems use multiple 8-bit microprocessors, one or more disk storage units, counter/management terminals, and printers for invoicing and reports. The systems are available in several different models to accommodate wholesalers of all sizes.
 - Every system is equipped with standard telecommunications software allowing users to exchange purchase orders and pricing and inventory information with suppliers and, in some cases, customers.
 - The systems are designed for modular growth. Optional applications available include the following:
 - Basic Inventory Management: Inventory management reporting, replenishment ordering, item sales history, on-hand balances, and purchase order control.
 - Advanced Inventory Management: Stock level calculation, popularity sales ranking, price labels, price lists, goal planning, and cash flow analysis.

- Invoice Printing: Point-of-sale and order entry.
 - Sales and Core Analysis.
 - Accounts Receivable.
 - General Ledger.
 - Accounts Payable.
 - Multi-Store.
 - Centralized Accounts Receivable.
 - TRANSNET: Automatic order transmission capability directly to the manufacturer via General Electric Information Services Company's networks.
- Series 12 wholesaler systems generally range in price from \$13,000 to \$60,000.
 - The Series 80 Warehouse Distributor System, introduced in 1980, is designed for larger warehouse operations.
 - Basic warehouse applications available with the system include order entry, inventory and purchasing, and accounts receivable.
 - Optional warehouse applications include sales analysis, multi-warehouse, warehouse price updates, general ledger, accounts payable, core banking, a custom report generator, and on-line invoice storage.
 - Telecommunications applications include TRANSNET, stock order polling, jobber-initiated stock orders, stock inquiry/special order, automatic jobber price updating, and jobber accounts receivable services.
 - Series 80 systems range in price from \$140,000 to \$300,000. Over 60 Series 80 systems are currently installed.
 - In late fiscal 1985 Triad experienced reliability problems with the Series 80. These problems significantly reduced sales of warehouse systems during fiscal 1985 and also contributed, together with other market factors, to reduced sales in fiscal 1986.

- In February 1987 Triad announced a new IBM 9370-based warehouse system that will target all segments of the warehouse market. Availability is scheduled for late calendar 1988.
- Triad does not expect significant revenues from sales of its Series 80 systems prior to the availability of its IBM 9370-based system.
- Triad offers two proprietary remote batch data base services to its wholesaler and retailer customers as follows:
 - Telepricing is a data base that provides automatic price updates for automotive parts upon a manufacturer's price change.
 - Telepricing services are available via remote batch or magnetic tape.
 - Telepricing customers pay an initial license fee and a monthly subscription fee ranging from \$80 to \$250.
 - There are currently approximately 2,000 Telepricing subscribers.
 - Electronic Catalog is a data base that includes over 1,250 product lines and can provide over six million automobile parts applications tailored to a wholesaler's inventory.
 - For a given automotive repair, Electronic Catalog identifies all the parts required together with prices and inventory levels and prompts the wholesaler to recommend related parts that the customer may need in addition to the part requested.
 - Triad charges a license fee and a monthly subscription fee averaging \$175 for this data base and provides the customer with periodic updates.
 - Electronic Catalog customers are required to subscribe to Telepricing to update the pricing information in the Electronic Catalog data base, unless the customer has access to an automatic pricing service provided by a Triad national account.
 - Electronic Catalog is available for Series 12 hardware. Series 10 users can purchase hardware upgrades to

Series 12 systems or can install LaserCat, Triad's new CD-ROM technology, to access the Electronic Catalog.

- As of September 30, 1987 approximately 1,300 customers had purchased Electronic Catalog. Annual subscription fees from this service are now in excess of \$2.4 million.
- In June 1987 Triad introduced TelePart, a terminal-based system that allows an auto repair shop to order automobile parts electronically by communicating directly with a wholesaler's Triad system.
 - The repair shop can access the wholesaler's Triad system to use the Electronic Catalog to first check the availability and list price of parts prior to ordering.
 - Triad markets these terminals to auto repair shops through its wholesaler customers.
 - Triad has shipped over 600 TelePart terminals to approximately 200 customers and sold another \$2.3 million in directly connected new systems, add-ons, and upgrades.
- Significant orders received from automotive parts aftermarket clients include the following:
 - During fiscal 1987 Triad received a multi-million-dollar order (the largest in its history) from Republic Automotive Parts, Inc. Republic serves more than 3,000 independent wholesalers and some 80 Republic-owned stores through six warehouses and three redistributing wholesalers. Triad has installed its Series 12 system in Republic's company-owned stores. Triad will also install its IBM 9370-based Automotive Warehouse Distribution System at Republic's six warehouse locations.

Triad's Hardgoods Division markets turnkey systems to hardware stores and home center, the lumber/building materials market, decorating retailers, and garden centers and retail nurseries.

- The systems are based on Triad-manufactured minicomputers that incorporate 16-bit microprocessors.
- Applications available include:
 - Point-of-sale.
 - Inventory management.
 - Pricing.

- Purchasing.
 - Receiving.
 - Sales analysis.
 - Accounting.
- Hardgoods systems range in price from \$13,000 to \$70,000. The average store system costs approximately \$39,000.
 - There are currently over 1,300 systems installed.
 - In order to facilitate marketing to potential customers, Triad has developed national account relationships with large hardware cooperatives, distributors, and associations to promote the benefits of Triad systems to their retail customers/affiliates. Three of the nation's largest buying cooperatives, Cotter & Company (with 8,000 True Value Hardware and V & S Variety store members), Hardware Wholesalers Inc., and American Hardware, have endorsed Triad systems to their members.
 - Triad also has reached a joint marketing agreement with Cotter & Company for its turnkey systems. Cotter & Company also endorsed Triad's TSC lease-financing subsidiary.

Through the Dental Division Triad markets practice management turnkey systems to dental practices.

- The systems are based on minicomputers and range in price from \$11,000 to \$34,000, with an average system price of \$17,000.
- Applications supported include receivables, billing, appointment scheduling, follow-up reminders, insurance processing, and word processing.
- In order to obtain broader industry acceptance for this product line, Triad has solicited endorsements and marketing relationships with major dental associations.
- Triad entered into marketing agreements with subsidiaries of the California and Texas Dental Associations in 1985 and a subsidiary of the Ohio Dental Association in 1986. Each of these subsidiaries receives compensation for ongoing marketing services and for the endorsements of Triad products.

- In 1986 Triad signed a joint marketing and endorsement agreement with a subsidiary of the American Dental Association, American Dental Office Systems, Inc. (ADOSI). Triad is in the process of converting ADOSI system users to Triad software.
- There are currently over 700 dental systems installed (approximately 25% of which are ADOSI systems in the process of conversion to Triad software).

Triad provides the following services to its clients in conjunction with its turnkey system sales:

- Pre-delivery services include cost-justification analysis, site planning and preparation, training for management and employees, installation planning, and customer visits to other Triad user sites.
- During fiscal 1986 Triad introduced Zapstart, a service that preloads an individual automotive customer's inventory, pricing, and parts applications data into its Triad system upon installation, saving customers manual data entry time.
 - Hardware retailers that are customers of certain hardware cooperatives or distributors can preload inventory files provided by these cooperatives or distributors.
 - Triad can also deliver a dental system preloaded with the practice's patient files.
- Customer training is available from 30 domestic and four foreign Triad education centers.
 - During fiscal 1987 over 13,000 individuals were trained. Triad also provided training through the sale of over 7,500 video tutorials and 3,500 hours of extended customer education.
 - Seminars and workshops are also available.
- Three months of system support is included in the price of a Triad system. Post-sale support is available through a System Support Agreement. The services offered include preventative and remedial maintenance, hardware engineering modifications, and software enhancements.
 - Field engineers and managers work out of 126 domestic and 14 foreign field service offices.

- The monthly fee due under the support agreement varies with system size and averages \$490.
- Triad's Advice Line gives customers telephone access to personnel able to perform on-line diagnostics and to dispatch a field engineer if on-site service is necessary.

Industry Markets

Triad derived its fiscal 1987 revenue from the automotive parts aftermarket, retail hardgoods dealers, and dental practices.

Triad markets to the automotive and retail hardgoods industries through its direct sales organization.

The company markets to private dental practices through 24 independent dealer organizations.

Geographic Markets

Approximately 94% of Triad's fiscal 1987 revenue was derived from the U.S. The remaining 6% was derived from Canada, Australia, and the U.K.

A three-year summary of source of revenue follows:

**TRIAD SYSTEMS CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	9/87		9/86		9/85	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$109.7	94%	\$103.4	93%	\$100.2	93%
International	7.6	6%	8.3	7%	7.1	7%
TOTAL	\$117.3	100%	\$111.7	100%	\$107.3	100%

Triad has approximately 96 offices located throughout the U.S. in support of sales and marketing, field services, and training.

The company has offices in Canada, the U.K., and Australia.

**Computer
Hardware and
Software**

Triad uses two of its Series 80 systems to update and store pricing data for its telepricing service. The data is transmitted to client Triad systems via telephone lines on a remote batch basis, generally after hours, or by magnetic tape.

Triad has a DEC VAX-11/780 installed at its headquarters for internal accounting functions.



Vendor Profile

A Publication from INPUT's Vendor Analysis Program - U.S.

March 1996

Triad Systems Corporation

President,
CEO & Director: James R. Porter
3055 Triad Drive
Livermore, CA 94550
Phone: (510) 449-0606
Fax: (510) 449-1037

Status:	Public
Employees:	1,453 (9/95)
Revenue:	\$175,077,000
Fiscal Year End:	9/30/95

Key Points

- Triad Systems Corporation is a leading provider of business and information management solutions for the automotive aftermarket and the hardlines and lumber industry.
- Triad's fiscal 1995 revenue reached \$175.1 million, and net income rose 11%, to \$8.0 million.
- In fiscal 1995, 73% of the company's revenue was derived from its substantial installed base.

- Triad is accelerating its penetration of the lightly automated hardlines and lumber market, with more than 500 new customers last year. Hardlines and lumber systems sales reached a record \$29.2 million in fiscal 1995.

Company Description

Triad, founded in 1972, designs, develops, manufactures, markets and supports proprietary database products in two vertical markets: the automotive parts aftermarket and the hardlines and lumber industry.

The company provides lease financing to its customers and third-party clients through its wholly owned subsidiary, Triad Systems Financial Corporation.

During 1995, 329,000 shares of treasury stock valued at \$1.9 million was reacquired by the company.

Organization and Structure

Triad, headquartered in Livermore (CA), is currently organized into various divisions and subsidiaries.

- The Automotive Division markets integrated systems to the automotive parts aftermarket, which consists of warehouse distributors, parts stores (jobbers and retailers) and auto repair shops. As of September 13, 1995, the company had over 10,000 Automotive Division customers.
- Triad's Hardlines and Lumber Division offers integrated business systems to hardware stores and home centers, lumber/building supplies stores and paint and decorating retailers. As of September 30, 1995, the company had approximately 4,000 customers in these markets.
- Triad's Customer Support Services organization provides service, training and support to the company's domestic and international customers. As of September 1995, the company had 114 domestic and 17 foreign field service offices.
- Triad's Information Services operation offers unique databases to its automotive customers and has a database catalog product for hardlines distribution chains affiliated with Cotter & Company (True Value).

Triad has two domestic subsidiaries as follows:

- Triad Systems Financial Corporation (Triad Financial), a wholly owned subsidiary, was formed in 1978 to provide lease financing to Triad's customers. It also provides similar services to third-party clients in Triad's

markets. Revenue from this unit was \$11.3 million in fiscal 1995.

- loadSTAR Systems, located in Newton (NJ), was acquired in 1991. It develops accounting software that runs on Wyse computer systems. loadSTAR employs approximately 75 employees and had an estimated \$9.2 million in fiscal 1995 revenue.

The company also has international subsidiaries in the U.K., Ireland, Canada and France.

Triad maintains sales and services operations at 131 locations, including 114 in the United States, 9 in Canada, and 8 in the U.K., Ireland and France.

Company Strategy

Triad's principal strategy is to increase its installed base by offering its database, hardware and software products in its two key markets, by penetrating adjacent segments of those markets, and by expanding geographically.

Triad is also becoming more closely affiliated with major co-ops and wholesale distributors to increase market penetration and increase revenue.

The company is expanding its customer base through the development and marketing of database products for the automotive parts aftermarket in the U.S., the U.K., and selected European Community countries.

Triad believes that its ability to offer lease financing to its customers through Triad Financial shortens the sales cycle and provides a competitive advantage in marketing Triad products. It also provides lease financing to independent third parties

and is actively pursuing additional third-party opportunities.

Financials

Triad's revenue was \$175.1 million in fiscal 1995, an increase of 5% over revenue of \$167.3 million in fiscal 1994. Net income rose 11%, to \$8.0 million in 1995, from \$7.2 million in 1994.

- Triad's fiscal 1995 revenue improvement was attributed primarily to record systems sales by its Hardlines and Lumber Division and continued growth in database revenue.

- Net income in fiscal years 1995 and 1994 reflected after-tax charges of \$0.4 million and \$0.1 million, respectively, related to the early retirement of debt.

Product development expenses after capitalization of software development were \$8.1 million in fiscal 1995, relatively constant with fiscal years 1994 and 1993.

A five-year financial summary follows.

Triad Systems Corporation Five-Year Financial Summary (\$ Millions, except per-share data)

Item	Fiscal Year				
	9/95	9/94	9/93	9/92	9/91
Revenue	\$175.1	\$167.3	\$152.8	\$152.6	\$137.5
• Percent change from previous year	5%	9%	---	11%	(5%)
Income before taxes and extraordinary charge	13.6	11.9	8.1	5.5	2.7
• Percent change from previous year	14%	47%	47%	104%	(53%)
Net income	8.0	7.2	5.1	2.1	2.1
• Percent change from previous year	(a) 11%	(a) 44%	138%	---	(42%)
Earnings (loss) per share	\$0.45	\$0.42	\$0.31	\$0.17	\$0.18
• Percent change from previous year	4%	35%	82%	(6%)	(42%)

(a) Includes after-tax charges of \$0.4 million in fiscal 1995 and \$0.1 million in fiscal 1994, related to early retirement of debt.

Revenue Analysis by Product/Service

Triad's fiscal 1995 systems revenue was \$73.3 million, comparable to fiscal 1994; customer services revenue rose to \$62.4 million, a 5% increase over revenue of \$59.7 million during the prior year; information services revenue grew to \$28.1 million, a 15% increase over 1994 revenue of \$24.4; and finance revenue

rose 10%, to \$11.3 million from \$10.2 million in 1994.

In fiscal 1995, 36% of Triad's revenue was derived from service and support agreements, 21% from sales of hardware and software upgrades and add-ons to existing customers and 16% from subscription fees for Triad's proprietary database products.

Information services revenue growth of 15% was attributed to increased penetration by Triad's expanding family of automotive database products, along with growth of its new point-of-sale transaction analysis services in both the automotive and hardlines markets.

Third-party leasing by Triad Financial grew 44% in fiscal 1995, contributing to the growth in Triad's finance revenue.

Triad Systems Corporation
Three-Year Source of Revenue Summary
 (\$ Millions)

	Fiscal Year					
	9/95		9/94		9/93	
Product/Service	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Systems	\$73.3	42%	\$72.9	43%	\$64.1	42%
Customer support services	62.4	36%	59.7	36%	59.5	39%
Information services	28.1	16%	24.5	15%	20.6	14%
Finance	11.3	6%	10.2	6%	8.6	5%
Total	\$175.1	100%	\$167.3	100%	\$152.8	100%

Interim Results

Revenue for the three months ending December 31, 1995 reached \$40.9 million, a decrease of 3% from \$42 million for the same period in 1994.

- Automotive aftermarket revenue was \$23.8 million, a 14% decrease from revenue of \$27.8 million during the three-month period the prior year.
- Automotive systems sales decreased to \$6.1 million from \$10.2 million during the quarter.
- Automotive customer support revenue of \$8.9 million decreased \$0.5 million from the same period the previous year. The decrease was attributed to lower priced service offerings related to more reliable technology, and a reduced customer base.

- Automotive information service revenue increased 9% to \$7.2 million over the previous year, and included a 9% increase in database sales.
- Triad Financial's revenue related to the automotive aftermarket was consistent with the same period a year ago, at \$1.7 million.
- Hardlines and Lumber industry revenue rose to \$15.7 million during the period, a 24% increase over revenue of \$12.6 million during the same period in 1994.
- Hardline systems sales rose to \$8.2 million, a 29% increase over the same period the previous year. A reduction in sales specialist turnover resulted in a 41% increase in productivity over the first quarter the prior year.

- Hardline customer support revenue increased 12% year to year, to \$5.1 million, reflecting the growth in Triad's customer base.
- Hardlines information services revenue increased to \$0.5 million, the majority of which was generated by the company's new point-of-sale (POS) business.
- Triad Financial's revenue related to the hardlines and lumber market rose to \$1.0 million, a 46% increase over the same period the prior year.

Market Financials

Triad's fiscal 1995 revenue in the automotive market was \$112.2 million, consistent with revenue during the prior year. Revenue in the hardlines and lumber market rose to \$56.3 million, a 12% increase over revenue of \$50.2 million in fiscal 1994.

Automotive aftermarket systems sales reached \$40.7 million, customer support revenue was \$36.7, information services revenue grew to \$26.8 million, and finance revenue reached \$8.0 million.

- Automotive systems revenue declined 9%, reflecting a temporary mid-year controlled rollout of the Triad Prism B jobber system, and reduced Service Dealer product sales.
- A decline of \$0.5 million in automotive customer services revenue was attributed to a shift in customers to newer systems technology.
- Automotive information services revenue grew to \$26.8 million in fiscal 1995, reflecting increases in database subscribers.

Hardlines and lumber systems sales reached \$29.2 million in fiscal 1995, customer support revenue grew to \$22.6, information services

revenue was \$1.3 million, and finance revenue reached \$3.2 million.

- Hardline systems revenue increased 12% in fiscal 1995, reflecting a concentration on large accounts and improved performance of the more stable sales force.
- Hardline customer services revenue increased 12%, reflecting an increasing customer base.
- Hardline information services revenue increases were attributed to a 150% increase in subscribers to VISTA, the new hardlines POS (point-of-sale) service.

Geographic Markets

Approximately 95% of Triad's fiscal 1995 revenue was derived from the U.S. The remaining 5% was derived from Canada and the U.K.

Employees

As of September 30, 1995, Triad Systems had 1,453 employees, including:

Field engineers and managers.....	188
Customer education representatives and managers.....	83
Product research.....	120
Manufacturing.....	54
General and administrative	120

The company currently has 1,450 employees.

Key Products and Services

Information Services

- Electronic Catalog is a database of over 17 million automobile parts applications.
- Proprietary software on Triad's jobber systems integrates information from the Electronic Catalog and the Telepricing

databases to identify parts and prices required for a repair job, and manage inventory levels.

- In September 1995, approximately 3,500 customers were paying monthly subscription fees for Electronic Catalog and its periodic updates.
- Telepricing service provides price updates for automotive parts following a manufacturer's price change.
 - An initial license fee and a monthly subscription fee are charged for the service.
 - This database had more than 3,000 subscribers in September 1995.
- LaborGuide Database provides estimates of labor hours for car repairs based on data from Mitchell International, Inc., and is designed for service dealers in the U.S.
 - In fiscal 1995, Major Service Intervals for domestic automobiles was added to the database, providing labor time and parts recommendations as defined by the automobile manufacturer.
 - There were more than 2,000 customers paying monthly fees for this database in September 1995.
- LaserGuide database is a reconfiguration of the Electronic Catalog, and identifies which automobile, by make and year, parts will fit.
 - In September 1995, there were approximately 300 customers of this database.
- Workstation products, including LaserCat and ServiceCat, are designed to make Triad's proprietary databases available to

businesses with or without Triad systems, through a CD ROM disk. They are designed to operate as standalone terminals or integrated as terminals in Triad's or a competitor's system.

- Databases for retailers—Triad integrated its databases into the systems of larger automotive retailers such as Goodyear, Western Auto, Kmart and Sears. Triad's applications software may, but need not, be included in these packages.
- Databases for manufacturers—Triad markets database services to auto parts manufacturers, using its own proprietary database. The database may be customized for the individual needs of the customer, combining any of the following with the full Telepricing database:
 - Competitive Analysis service compares price levels and number of applications to a competitor's product line.
 - MarketPACE is Triad's new transaction analysis service for the automotive aftermarket. It supplies comprehensive POS information and inventory analysis.
 - VISTA is Triad's new transaction analysis service for the hardlines and lumber industry. This information service provides product manufacturers with POS business analysis data from independent hardware stores, home building centers, and lumber and building materials outlets.
- Databases for international markets are created, maintained and distributed by Triad's wholly owned subsidiary in Longford, Ireland.
- Cotter & Company Database is a catalog of products available from the Cotter & Company (True Value) cooperative

warehouses. It is marketed to Cotter affiliates, independent outlets and those affiliated with other cooperatives.

Hardware Systems and Software Products

Triad's applications software and business computer systems, together with its database products, provide comprehensive business solutions targeted to its two key markets: the automotive aftermarket and the hardlines and lumber industry.

Triad's software products allow its customers to access the company's proprietary databases. Its systems have communication capabilities allowing users to exchange purchase orders and pricing and inventory information with suppliers and, in some cases, customers.

Automotive Aftermarket products include:

- Triad Prism, introduced in 1993, is a UNIX-based system created specifically for the larger automotive parts jobber.
 - It has management-by-exception capabilities, tracks inventory, and performs accounting functions as well as invoicing and billing operations.
- Series 11, Series 12 and Series 14 product lines also track inventory and perform accounting, invoicing, and billing functions.
 - Smaller warehouse distributors also use these systems with specialized applications software.
 - Series 11 and Series 12 systems are entry-level products using a Triad microcomputer with a proprietary operating system.
- TelePart terminals are designed for jobber customers who generally place them on-site with their service dealer customers. The TelePart terminal allows service dealers to

order parts electronically through direct communication with the jobber's Triad system equipped with the Electronic Catalog.

- ServiceWriter combines Triad's databases of parts, applications, detailed labor estimates and recommended vehicle service intervals with its workstation technology in a pull-down windows format.
 - It creates printed work estimates and automated work orders and maintains individual vehicle records and histories.
 - ServiceWriter can be expanded to include inventory management, POS, and general accounting applications.
- ServiceCat is a workstation that enables service dealers to estimate the cost of an entire repair job.
 - It includes the Electronic Catalog and LaborGuide databases and TelePart software.
 - The Information Services Division also markets the ServiceCat software and databases separately from the workstation.
- LaserCat makes the Electronic Catalog database available to customers with or without a Triad jobber system, and regardless of whether or not they are automated.
 - It is an independent, PC-based workstation using CD ROM to provide access to Triad's Electronic Catalog database.
 - LaserCat software and databases are also marketed separately from the workstation by Triad's Information Services Division.

- Triad's warehouse systems offer increased processor speed and application enhancements to serve businesses with high transaction volumes.

- Triad's UNIX-based Warehouse System provides total warehouse management capabilities and provides a powerful relational database to access required information.
- Paperless Warehouse enables the use of hand-held computers equipped with barcode scanners and radio transmitters to perform warehouse tasks, from receiving to stocking and from order picking to shipping, transmitting the data to the host Triad computer.

Hardlines and Lumber Industry systems automate inventory control, point-of-sale functions (such as invoicing and billing), payroll, accounting, and purchase orders for affiliated cooperatives and distributors.

- Eagle series is a UNIX-based, Intel 486/Pentium-driven business and information management system designed for mid-sized to large hardlines and lumber dealers. These systems have greater power and functionality, providing expanded access to larger hardlines and lumber dealers.
- Eagle LS manages the flow of a typical transaction, including estimating, ordering and inventory management, shipping, invoicing, and tracking accounts receivable.
- LaserStation includes the Cotter & Company database and is a standalone unit that may be integrated as part of a Triad hardlines system for Cotter & Company members.

Business Products are to the automotive aftermarket and hardlines and lumber industry through catalogs and telemarketing services.

Customer Support and Services

Triad's Customer Support Services organization represents approximately 33% of the company's employees, and provides service, training, and support to Triad's domestic and international customers.

Triad typically provides a limited warranty on its systems, and also sells a variety of post-sale support programs, including preventive and remedial maintenance, hardware engineering modifications, and daily system operating support by phone. Monthly domestic fees vary with system size.

- AdviceLine provides access to trained personnel able to perform on-line diagnostics or to field engineers if on-site service is necessary.
- Quick Assist is an automated service that provides immediate high-priority assistance by an AdviceLine representative.

Customer training is offered in Triad facilities, including 44 education centers nationwide. On-site training is also provided at customer sites. System operations and software enhancement training is offered, as are seminars and workshops to assist customers in understanding the capabilities of their systems.

Cost-justification analysis, site planning and preparation, user training, and installation planning are provided by Triad sales representatives. In addition, preloading of customers' data into Triad systems is offered upon installation.

Financing Services

Triad provides financial services through its subsidiary, Triad Financial. This unit purchases Triad systems and other products, and leases those products to third parties under full-payout, direct financing leases.

- In fiscal 1995, Triad Financial provided approximately 60% of Triad's domestic business systems sales.
- Triad Financial purchased and leased \$37 million of Triad equipment during fiscal 1995.
- During the same period, Triad Financial also provided \$16.5 million in lease financing to independent third parties in the markets that Triad serves.

Marketing and Sales

Triad markets its automotive and hardlines products and services through a 240-person direct sales organization.

- The company's systems are marketed through direct sales calls, telephone sales and by system demonstrations in customer facilities or in Triad sales offices.
- Database products are marketed directly by telemarketing and direct sales, or indirectly through VARs to jobbers, service dealers and hardlines distribution chains.

Business Products are marketed to the automotive aftermarket and the hardlines and lumber industry through catalogs and

Triad's competition for its applications software and database products comes from firms ranging from small, independent applications software producers to partnerships of software producers and computer systems manufacturers.

In both the automotive aftermarket and the hardlines and lumber segment, the company experiences competition from distributors and cooperatives that market computer systems to their members.

Competition for Triad's higher priced warehouse systems comes both from customers developing their own systems in-house and from large, well-established businesses that offer general-purpose business computers and custom programming.

INPUT Assessment

Triad's strengths include:

- Extensive experience in the automotive aftermarket and the hardlines and lumber industry
- Resources to introduce and upgrade products and services on a continual basis
- The ability to provide lease financing to its customers through Triad Financial
- A strong national service organization, representing a major competitive advantage

Triad's greatest concerns in the coming year are regarding economic factors directly affecting its primary markets, which are mainly comprised of independent businesses.

FINANCIAL UPDATE TO PROFILE DATED MAY 1984*

TRIAD SYSTEMS CORPORATION

1252 Orleans Drive
P.O. Box 61779
Sunnyvale, CA 94089
(408) 734-9720

William W. Stevens, Chairman
James R. Porter, President and CEO
Public Corporation, OTC
Total Employees: 1,367
Total Revenue, Fiscal Year End
9/30/85: \$107,278,000

TRIAD SYSTEMS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/85	9/84	9/83	9/82	9/81
Revenue	\$ 107,278	\$ 120,433	\$ 90,831	\$ 82,314	\$ 78,391
• Percent increase (decrease) from previous year	11%	33%	10%	5%	39%
Income (loss) before taxes	\$ (6,103)	\$ 6,998	\$ 2,679	\$ 4,614	\$ 16,379
• Percent increase (decrease) from previous year	(187%)	161%	(42%)	(72%)	75%
Net income (loss)	\$ (5,507)	\$ 4,807	\$ 2,142	\$ 3,271	\$ 8,683
• Percent increase (decrease) from previous year	(215%)	124%	(35%)	(62%)	73%
Earnings (loss) per share	\$ (0.74)	\$ 0.66	\$ 0.29	\$ 0.46	\$ 1.35
• Percent increase (decrease) from previous year	(212%)	128%	(37%)	(66%)	67%

- TSC Leasing Corporation (TSC), a wholly owned nonconsolidated subsidiary, purchases Triad systems for lease to third parties under direct financing leases.
 - TSC purchased and leased \$22.3 million, \$30.1 million, and \$30.8 million of Triad equipment during fiscal 1985, 1984, and 1983, respectively.

*Replaces Financial Update of February 1985

TRIAD SYSTEMS CORPORATION

- Triad's investment in TSC is accounted for by the equity method. Income from TSC was \$5.1 million in fiscal 1985, \$5.5 million in fiscal 1984, and \$6.5 million in fiscal 1983.
- Triad management attributes revenue declines to weaker business conditions in the automotive aftermarket, delayed availability of application data for the company's Electronic Parts Catalog, and product problems in the Automotive Division's warehouse systems product line.
 - During the second half of fiscal 1985 the company instituted a cost reduction program to improve profitability.
- Revenue for the three months ending December 31, 1985 was \$27.7 million, a 16% increase over \$23.9 million for the same period in 1984. Net income for the quarter was \$403,000, compared with losses of \$1.6 million for the first quarter of fiscal 1985.

SOURCE OF REVENUE

- Approximately 98% of Triad's fiscal 1985 revenue was derived from the sale of turnkey systems and associated support services. Two percent (\$2.2 million) was derived from Telepricing^{T.M.}, a remote batch automotive parts updating service.
- A three-year summary of Triad's source of revenue by application area/service follows (\$ millions):

FISCAL YEAR ITEM	9/85		9/84		9/83	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Automotive parts systems (a)	\$ 46.8	44%	\$ 75.2	62%	\$58.4	64%
Hardgoods systems	14.8	14	11.6	10	11.9	13
Tire systems	1.9	2	2.1	2	1.0	1
Dental systems	1.7	1	0.2	-	-	-
System maintenance and processing services	42.1	39	31.3	26	19.5	22
Total	\$ 107.3	100%	\$ 120.4	100%	\$90.8	100%

(a) Includes warehouse systems revenue.

TRIAD SYSTEMS CORPORATION

- Approximately 93% (\$100.2 million) of Triad's fiscal 1985 revenue was derived from the U.S. The remaining 7% (\$7.1 million) was derived from the U.K., Canada, and Australia.



FINANCIAL UPDATE TO PROFILE DATED MAY 1984

TRIAD SYSTEMS CORPORATION

1252 Orleans Drive
P.O. Box 61779
Sunnyvale, CA 94088
(408) 734-9720

William W. Stevens, Chairman and
President

Public Corporation, OTC
Total Employees: 1,449
Total Revenue, Fiscal Year End
9/30/84: \$120,433,000

TRIAD SYSTEMS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/84	9/83	9/82	9/81	9/80
Revenue	\$ 120,433	\$ 90,831	\$ 82,314	\$ 78,391	\$ 56,513
• Percent increase from previous year	33%	10%	5%	39%	83%
Income before taxes	\$ 6,998	\$ 2,679	\$ 4,614	\$ 16,379	\$ 9,351
• Percent increase (decrease) from previous year	161%	(42%)	(72%)	75%	48%
Net income	\$ 4,807	\$ 2,142	\$ 3,271	\$ 8,683	\$ 5,031
• Percent increase (decrease) from previous year	124%	(35%)	(62%)	73%	53%
Earnings per share	\$ 0.66	\$ 0.29	\$ 0.46	\$ 1.35	\$ 0.81
• Percent increase (decrease) from previous year	128%	(37%)	(66%)	67%	45%

- TSC Leasing Corporation (TSC), a wholly owned nonconsolidated subsidiary, purchases Triad systems for lease to third parties under direct financing leases.
 - TSC purchased and leased \$30.1 million, \$30.8 million, and \$37.7 million of Triad equipment during fiscal 1984, 1983, and 1982, respectively.
 - Triad's investment in TSC is accounted for by the equity method. Income from TSC was \$5.5 million in fiscal 1984, \$6.5 million in fiscal 1983, and \$3.1 million in fiscal 1982.

TRIAD SYSTEMS CORPORATION

- Revenue for the three months ending December 31, 1984 was \$23.9 million, a 1% decrease from \$24.1 million for the same period in 1983. Net losses for the quarter were \$1.6 million, compared with net income of \$430,000 for the first quarter of fiscal 1984.

SOURCE OF REVENUE

- Approximately 99% of Triad's fiscal 1984 revenue was derived from the sale of turnkey systems and associated support services. One percent was derived from TelepricingTM, a remote batch automotive parts updating service.
- A three-year summary of Triad's source of revenue by application area/service follows (\$ millions):

FISCAL YEAR ITEM	9/84		9/83		9/82	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Automotive parts systems (a)	\$ 75.2	62%	\$58.4	64%	\$58.6	72%
Hardgoods systems	11.6	10	11.9	13	9.8	12
Tire systems	2.1	2	1.0	1	1.2	1
Dental systems	0.2	-	-	-	-	-
System maintenance	<u>31.3</u>	<u>26</u>	<u>19.5</u>	<u>22</u>	<u>12.7</u>	<u>15</u>
Total	\$ 120.4	100%	\$90.8	100%	\$82.3	100%

(a) Includes warehouse systems revenue.

COMPANY HIGHLIGHT

TRIAD SYSTEMS CORPORATION

1252 Orleans Drive
P.O. Box 61779
Sunnyvale, CA 94088
(408) 734-9720

William W. Stevens, Chairman and
President
Public Corporation: OTC
Total Employees: 1,337
Total Revenue, Fiscal Year End
9/30/83: \$90,831,000

THE COMPANY

- Triad Systems Corporation, founded in 1972, develops, manufactures, and markets industry-specific small business turnkey systems to automotive parts wholesalers, automotive warehouse distributors, retail hardware dealers, and independent tire dealers. The company also provides automotive parts pricing and catalog updating services. In 1984 Triad began marketing turnkey systems to dental practices.
- Fiscal 1983 revenue reached \$90.8 million, a 10% increase over fiscal 1982 revenue of \$82.3 million. Net income declined 35% from \$3.3 million in fiscal 1982 to \$2.1 million in fiscal 1983. A five-year financial summary follows:

TRIAD SYSTEMS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/83	9/82	9/81	9/80	9/79
Revenue	\$ 90,831	\$ 82,314	\$ 78,391	\$ 56,513	\$ 30,805
• Percent increase from previous year	10%	5%	39%	83%	109%
Income before taxes	\$ 2,679	\$ 4,614	\$ 16,379	\$ 9,351	\$ 6,303
• Percent increase (decrease) from previous year	(42%)	(72%)	75%	48%	93%
Net income	\$ 2,142	\$ 3,271	\$ 8,683	\$ 5,031	\$ 3,297
• Percent increase (decrease) from previous year	(35%)	(62%)	73%	53%	101%
Earnings per share	\$ 0.29	\$ 0.46	\$ 1.35	\$ 0.81	\$ 0.56
• Percent increase (decrease) from previous year	(37%)	(66%)	67%	45%	87%

TRIAD SYSTEMS CORPORATION

- Triad management attributes continued declines in net income to the effects of the recession on customer business spending, increased costs for customer services, higher product development expenses, and decreased interest income.
 - Cost of services increased from \$9.8 million in fiscal 1982 to \$16.5 million in fiscal 1983, primarily due to the increase in the number of systems being serviced and an expansion of customer support services.
 - Product development expenditures were \$10.8 million (12% of revenue) in fiscal 1983, as compared with \$8.7 million (11% of revenue) in fiscal 1982 and \$5.3 million (7% of revenue) in fiscal 1981.
 - Interest income was \$1.6 million in fiscal 1983, as compared with \$2.9 million in fiscal 1982, principally as a result of lower interest rates and lower levels of funds available for investment.
- Revenue for the six months ending March 31, 1984, reached \$55.4 million, a 123% increase over \$44.9 million for the same period in fiscal 1983. Net income for the period was \$2.1 million, as compared with \$1.7 million in 1983.
- Triad is currently organized into four divisions, corresponding to the industries served, as follows:
 - The Automotive Division markets turnkey systems to automotive parts wholesalers and warehouse distributors (the automotive "after-market"). The operations of the former Warehouse Systems Division were merged with this group in 1983.
 - The Hardgoods Division markets turnkey systems to retail hardware dealers.
 - The Tire Division markets turnkey systems to independent retail tire dealers and distributors.
 - The Dental Division markets Triad systems to dental practices.
- TSC Leasing Corporation (TSC), a wholly owned nonconsolidated subsidiary, purchases Triad systems for lease to third parties under direct financing leases.
 - TSC purchased and leased \$30.8 million, \$37.7 million, and \$31.3 million of Triad equipment during fiscal 1983, 1982, and 1981, respectively.
 - Triad's investment in TSC is accounted for by the equity method. Income from TSC was \$6.5 million in fiscal 1983, \$3.1 million in fiscal 1982, and \$2.8 million in fiscal 1981.

TRIAD SYSTEMS CORPORATION

- Triad has two foreign sales subsidiaries: TRIDEX Systems Ltd. in the U.K. and Triad Systems Canada, Ltd., in Canada.
- As of March 1, 1984, Triad had 1,343 employees, segmented as follows:

Sales/marketing	609
Research and development	76
Customer support	84
Field service	360
Manufacturing	97
General and administrative	<u>117</u>
	1,343

- Triad's major competitors include the following:
 - In the auto parts market regional systems houses offer some competition. NAPA, a nationwide parts supplier with about 3,000 affiliated wholesale dealers, is second to Triad in the number of installed systems. Triad and NAPA rarely compete, however, because NAPA markets systems only to its affiliates.
 - Competitors in the warehouse market include Computer Resources International, Parts, Inc., and Cooperative Computing.
 - In the retail hardware area competition includes IBM, ICL, and Data-line.
 - In the retail tire market Triad's competition includes vendors offering customized systems: Data General, Texas Instruments, and Mohawk Data Sciences, as well as major minicomputer vendors.
 - In the dental market, Triad's competition includes Moore Business Systems and Quality Systems.

KEY PRODUCTS AND SERVICES

- Approximately 98% of Triad's fiscal 1983 revenue was derived from the sale of turnkey systems and associated support services. Two percent was derived from a remote batch automotive parts price updating service.

TRIAD SYSTEMS CORPORATION

- A three-year summary of Triad's source of revenue by application area/service follows (\$ millions):

	9/83		9/82		9/81	
	<u>Revenue</u>	<u>Percent of Total</u>	<u>Revenue</u>	<u>Percent of Total</u>	<u>Revenue</u>	<u>Percent of Total</u>
Automotive parts systems	\$ 53.4	59%	\$ 53.3	65%	\$ 61.8	79%
Hardware systems	11.9	13	9.8	12	3.8	5
Warehouse systems	5.0	5	5.3	7	4.8	6
Tire systems	1.0	1	1.2	1	0.9	1
System maintenance	<u>19.5</u>	<u>22</u>	<u>12.7</u>	<u>15</u>	<u>7.1</u>	<u>9</u>
Total	\$ 90.8	100%	\$ 82.3	100%	\$ 78.4	100%

- As of September 30, 1983, a total of 5,090 Triad systems had been installed, as follows:

Automotive parts systems	4,600
Hardware systems	370
Warehouse systems	50
Tire systems	<u>70</u>
	5,090

- Automotive parts system shipments totaled 769 in fiscal 1983 compared to 772 in 1982 and 941 in 1981. Warehouse system shipments totaled 14 in fiscal 1983 compared to 14 in 1982 and 13 in 1981.
- System shipments in the Hardgoods Division totaled 174 in fiscal 1983 compared to 141 in 1982 and 55 in 1981.
- In the Tire Division, shipments totaled 36 in fiscal 1983 compared to 24 in 1982 and 13 in 1981.
- Triad's turnkey systems address client requirements for point-of-sale terminals, on-line management of inventory, order entry, purchasing, sales, and accounting functions. The company had developed packaged applications software for each vertical market it serves.
 - Triad systems are designed to communicate with each other in order to exchange purchase order, pricing, and inventory information via company designed communications processors that are integrated with data modems, operating systems, and applications software.
 - The turnkey systems are manufactured in-house from standard components and prefabricated parts, including integrated circuits, printed circuit boards, and metal parts purchased to the company's specifications.

TRIAD SYSTEMS CORPORATION

- Triad also purchases major standard peripherals, such as disk drives and printers, from outside vendors.
- System hardware configurations are modular and typically include the CPU, disk storage, display terminals, point-of-sale terminals, printers, and communications processors.
- Triad's first turnkey systems were designed for the automobile parts wholesale industry. This market continues to represent the majority of the company's revenue. Over 4,600 automotive parts systems are currently installed.
 - Triad Series 10 systems, introduced in 1972, and Series 12 systems, introduced in fiscal 1984, use multiple 8-bit microprocessors, one or more disk storage units, counter/management terminals, and printers for invoicing and reports.
 - The systems are available in several different models to accommodate automotive parts wholesalers ("jobbers") of all sizes.
 - Every system is equipped with standard telecommunications software for transmission of orders to suppliers and receipt of price updates and part number status.
 - All Series 10 and 12 systems are designed for modular growth. Optional applications available include the following:
 - Basic Inventory Management.
 - Inventory management reports.
 - Replenishment ordering.
 - Item sales history.
 - On-hand balances.
 - Purchase order control.
 - Advanced Inventory Management.
 - Stocking level calculation.
 - Popularity sales ranking.
 - Price labels.
 - Price lists.
 - Goal planning and cash flow analysis.
 - Invoice Printing.
 - Point-of-sale.
 - Order entry.
 - Sales and core analysis.
 - Accounts receivable.

TRIAD SYSTEMS CORPORATION

- General ledger.
- Accounts payable.
- Multi-store.
- Centralized accounts receivable.
- TRANSNET[™].
 - Automatic order transmission capabilities directly to manufacturer via General Electric Information Services Company's networks.
- In 1984 Triad introduced its Series 12 product line featuring higher capacity disk storage. This product line replaces the Series 10 computers and is software compatible. The only Series 10 computers currently being marketed are two remanufactured systems: the Triad 1A and 1B entry level systems for the two-to-three-counterperson store. Users can select from the modular software options available on other Series 10 systems. Prices start at \$12,000, plus applications software. The average system price is \$21,500.
- Series 12 systems offer increased speed and backup options to the Series 10. An optional Parts Application Catalog software feature permits counterpersons to call up on a video display screen all the part numbers that fit a particular customer application (i.e., "tune-up"), including the related or alternate parts. The display also shows the exact quantity on hand, list price, and correct price for that customer, as well as labor specifications. The information can then be automatically transferred to an invoice. Triad also provides catalog information updating.
 - Series 12 systems start at \$26,500, plus optional software. Total system prices range from \$37,000 to \$250,000, with an average price of \$48,500.
- Telepricing[™] is an optional remote batch price updating service available to Automotive Division clients in the U.S. and Canada.
 - Updates for over one million automotive parts from over 350 manufacturers are automatically entered into customer systems from Triad's central computer via telephone lines.
 - The service fees range from \$45 to \$175 per month, depending on the number of parts on the system.
 - Telepricing currently has over 1,000 customers.

TRIAD SYSTEMS CORPORATION

- The Triad Series 80 systems, introduced in 1980, were developed specifically for automotive warehouse distributors. Six models are now available, based on the size of business, ranging from the small-to-medium, single location warehouse distributor up to the very large multiple distribution center operations.
 - The systems are 32-bit minicomputer-based with duplicate disk memories and two copies of data on-line with tape backup.
 - Distributed processing capabilities permit warehouse distributors with company-owned stores to add Series 10 or Series 12 systems to provide centrally controlled distribution and dial-up telecommunications links.
 - Modular applications are available as follows:
 - Basic Warehouse Applications.
 - Order entry.
 - Inventory and purchasing.
 - Accounts receivable.
 - Optional Warehouse Applications.
 - Sales analysis.
 - Multi-warehouse.
 - Warehouse price updates.
 - General ledger.
 - Accounts payable.
 - Core banking.
 - Custom report generator.
 - On-line invoice storage.
 - Telecommunications Applications.
 - TRANSNET.
 - Stock order polling.
 - Jobber-initiated stock orders.
 - Stock inquiry/special order.
 - Automatic jobber price updating.
 - Jobber accounts receivable services.
 - Series 80 systems range in price from \$170,000 to \$1,200,000 and average \$325,000. There are currently 52 systems installed.
 - Telepricing updating services are also available to warehouse distributor clients via remote batch or magnetic tape.
- In 1981 Triad introduced its Hardgoods turnkey system for retail hardware stores, home improvement centers, lumber, and building materials businesses.

TRIAD SYSTEMS CORPORATION

- This system uses a 16-bit processor and ranges in price from \$25,000 to \$150,000 with an average system price of \$65,000. Over 423 systems have been installed.
- Applications available include:
 - . Point-of-sale.
 - . Inventory management.
 - . Pricing.
 - . Purchasing.
 - . Receiving.
 - . Sales analysis.
 - . Accounting.
- In June 1983 Triad introduced the Small Retail System. Based on the Texas Instruments microprocessor, the system starts at \$25,000.
 - . Applications available include point-of-sale, inventory management, lumber yard management, accounts receivable, accounts payable, and general ledger.
 - . Over 100 systems are currently installed.
- In July 1984 Triad plans to introduce software enhancements specifically for lumber and building materials dealers.
 - . Additional capabilities will include open order invoicing, estimating and bid retention, and various unit of measure conversions.
- Triad has developed national account relationships with hardware product wholesalers to promote the benefits of these systems to their retail dealer affiliates. Three of the nation's largest cooperatives, including Cotter and Company (True Value), Hardware Wholesalers Inc., and American Hardware, have endorsed Triad systems to their combined membership of 13,000 hardware dealers.
- Triad systems have also been endorsed by the National Decorating Products Association, with 2,500 dealer members in a market of 6,000 establishments.
- The Triad Tire Management System, introduced in 1981, uses a 16-bit processor and is marketed to independent retail tire dealers and distributors.
 - The system ranges in price from \$25,000 to \$150,000 and averages \$35,000.
 - Over 91 systems are installed.

TRIAD SYSTEMS CORPORATION

- Applications available include:
 - . Point-of-sale/order entry.
 - . Pricing control.
 - . Inventory.
 - . Sales accounting.
 - . Customer accounting.
 - . Financial accounting.
 - . Purchasing.
- In March 1984 Triad introduced a 16-bit microprocessor-based turnkey system for dental practices.
 - Features include receivables, insurance processing, appointment scheduling, and follow-up reminders, in addition to a data base of scheduled coverages by various insurance companies.
 - The system ranges in price from \$15,000 to \$25,000
- Triad provides the following services to its clients in conjunction with its turnkey system sales:
 - Pre-delivery services include cost justification analysis, site planning and preparation, visits to other Triad users, and installation planning.
 - Customer training is generally conducted at one of 37 Triad Education Centers.
 - Post-sale support is available through a System Support Agreement. The services offered include preventive and remedial maintenance, customer training, hardware upgrades, and software enhancements.
 - . The monthly fee received under the support agreement varies with system size and averages \$500. Three months of system support is included in the price of the system.
 - . As of March 1, 1984, Triad had 360 field service personnel, of which 275 field engineers were located at 123 service branch offices.
- All Triad systems are installed under a "60-day evaluation program" whereby the customer has the opportunity to thoroughly evaluate the system and to return it for full refund within the evaluation period if not completely satisfied. Historically, over 98% of Triad's customers have kept their systems after the evaluation period.

INDUSTRY MARKETS

- Triad derived 100% of fiscal 1983 revenue from the retail and wholesale distribution industries.

TRIAD SYSTEMS CORPORATION

- Triad's target markets for its turnkey systems are as follows:
 - Automotive parts wholesalers of all sizes, with sales ranging from under \$200,000 to over \$5 million, and warehouse distributors with annual sales in excess of \$5 million.
 - Retail hardware dealers with annual sales over \$500,000.
 - Large cooperatives and wholesale distributors of hardware items influence the market and are prospective Triad national accounts.
 - Independent retail tire dealers and distributors with annual sales over \$500,000.
 - Dentists with annual revenue over \$150,000.
- Triad has a national accounts marketing program that emphasizes marketing to major regional and national distribution groups and to warehouse customers whose span of activities extends across multiple sales territories. As of March 1984 Triad had marketing agreements with approximately 239 such groups.

GEOGRAPHIC MARKETS

- Approximately 96% of Triad's fiscal 1983 revenue is derived from the U.S. The remaining 4% was derived from Canada and the United Kingdom.
- Triad markets to the end user through a direct sales and service staff operating out of approximately 151 branch offices located throughout the U.S., eight offices in Canada, and four offices in the United Kingdom.

COMPUTER HARDWARE AND SOFTWARE

- Triad has a DEC VAX-11/780 installed at its headquarters for internal accounting functions.
- The company uses two of its 32-bit Triad 80 systems to update and store pricing data for its Telepricing service. The data is transmitted to client Triad systems via telephone lines on a remote batch basis, generally after hours.

FINANCIAL UPDATE TO HIGHLIGHT DATED FEBRUARY 1982

TRIAD SYSTEMS CORPORATION
1252 Orleans Drive
P.O. Box 61779
Sunnyvale, CA 94088
(408) 734-9720

William W. Stevens, Chairman and
President
Public Corporation: OTC
Total Employees: 1,310
Total Revenue, Fiscal Year End
9/30/82: \$82,314,000

TRIAD SYSTEMS CORPORATION FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/82	9/81	9/80	9/79	9/78
Revenue	\$ 82,314	\$ 78,391	\$ 56,513	\$ 30,805	\$ 14,757
. Percent increase from previous year	5%	39%	83%	109%	103%
Income before taxes	\$ 4,614	\$ 16,379	\$ 9,351	\$ 6,303	\$ 3,265
. Percent increase (decrease) from previous year	(72%)	75%	48%	93%	118%
Net income	\$ 3,271	\$ 8,683	\$ 5,031	\$ 3,297	\$ 1,640
. Percent increase (decrease) from previous year	(62%)	73%	53%	101%	110%
Earnings per share	\$ 0.46	\$ 1.35	\$ 0.81	\$ 0.56	\$ 0.30
. Percent increase (decrease) from previous year	(66%)	67%	45%	87%	114%

SOURCE OF REVENUE

- One hundred percent of Triad's fiscal 1982 revenue was derived from turnkey systems sales.



COMPANY HIGHLIGHT

TRIAD SYSTEMS CORPORATION

1252 Orleans Drive
P.O. Box 61779
Sunnyvale, CA 94088
(408) 734-9720

William W. Stevens,
Chairman and President
Public Corporation, OTC
Total Employees: 1,092
Total Revenue, Fiscal Year
End 9/30/81: \$78,390,829
Total Computer Services
Revenue: \$71,390,000

THE COMPANY

- Triad Systems Corporation, founded in 1972, develops and markets small business turnkey systems for automotive parts wholesalers, retail hardware dealers, and independent tire dealers. Triad became a public company in late 1979.
- 1981 revenue was \$78.4 million, up 39% from 1980 revenue of \$56.5 million. The increase was primarily due to higher field service and system accessory revenue, and the introduction of products into new market areas. These new markets, hardware and tire retailers, accounted for 13% of system sales revenue in 1981.
 - Seventy-five percent of the company's revenue is from new system sales and 25% is from existing customers (10% from service contracts, 15% from add-on enhancements).
 - With the exception of FY 1980, Triad's pre-tax margins have been in excess of 20%.
 - A five-year financial summary follows.

TRIAD SYSTEMS CORPORATION

TRIAD
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	9/81	9/80	9/79	9/78	9/77
Total revenue	\$78,391	\$56,513	\$30,805	\$14,757	\$ 7,269
• Percent increase from previous year	39%	83%	109%	103%	88%
Income before taxes	\$16,380	\$ 9,351	\$ 6,303	\$ 3,265	\$ 1,495
• Percent increase from previous year	75%	48%	93%	118%	315%
Net income	\$ 8,684	\$ 5,031	\$ 3,297	\$ 1,640	\$ 781
• Percent increase from previous year	73%	53%	101%	110%	289%
Earnings per common share	\$ 1.35	\$ 0.81	\$ 0.56	\$ 0.30	\$ 0.14
• Percent increase from previous year	67%	45%	87%	114%	250%

- Results for first quarter, ended December 1981, were significantly below average. Revenues were \$16 million, up 5% over \$15.3 million for the same period in 1980. Income before taxes was \$721,000, down 78% from \$3.28 million for the first quarter in fiscal 1980.
- Poor first quarter results, due to weak system shipments, can be partially attributed to incentives for salespeople to maximize year-end sales in the preceding fourth quarter. About \$2 million in business was pulled forward as a result. Weak economic conditions, particularly in the automotive industry, and uncertainty over interest rate trends were also factors.

- Triad is organized into divisions corresponding to the industries it serves. Divisions and revenue contributed in 1981 are (\$ thousands):

Automotive (wholesale parts)	\$62,100	87%
Warehouse (automotive parts)	4,700	7
Hardware (retail)	3,700	5
Tire (retail)	840	1
	<u>\$71,340</u>	<u>100%</u>

- TSC Leasing Corporation, a wholly owned nonconsolidated subsidiary, provides lease financing for Triad's customers.

TRIAD SYSTEMS CORPORATION

- In May 1981, Tridex Systems Ltd., a United Kingdom sales subsidiary, commenced operations. Initially, Tridex will market auto parts wholesale systems only.
- Triad has 1,092 employees segmented as follows:

Research and development	132
Marketing, sales, and customer support	574
Field service	225
Manufacturing	88
General and administrative	73
	1,092
- Triad's principal competition is from system integrators.
 - In the auto parts market, NAPA, a nationwide parts supplier with about 3,000 affiliated wholesale dealers, is Triad's main competitor. NAPA markets systems only to its affiliates, however. Regional systems houses offer some competition in this market.
 - Competitors in the warehouse market include Computer Resources International, Parts, Inc., and Cooperative Computing.
 - In the retail hardware area competition includes IBM, ICL, and Data-line.
 - In the retail tire market Triad's competition includes vendors offering customized systems: Data General, Texas Instruments, and Mohawk Data Sciences, as well as major minicomputer vendors.

KEY PRODUCTS AND SERVICES

- One hundred percent of Triad's revenue is derived from marketing and support of turnkey systems, developed in-house and designed for specific vertical markets.
- Triad's success can be attributed to several factors:
 - It develops close ties with each industry it serves, through businessmen and trade associations.
 - Triad works to become thoroughly knowledgeable about how the business works, and to understand the management problems.
 - Close industry ties are maintained by participation in trade organizations and trade shows.

- . User suggestions for system improvements are actively sought, reviewed by industry advisory councils, and often result in program upgrades and enhancements, which are provided to customers at no charge.
- Triad designs its systems for operation by people with no computer background.
 - . Systems are extremely user friendly.
 - . Training for management and employees before installation is included in the purchase price. After installation, instruction for new employees is offered, as well as classes on enhancements and upgrades.
 - . Unlimited hot line and on-site support are available.
- Triad designs and assembles hardware from standard and made-to-order components supplied by outside vendors - a key element in their high profitability rate.
 - . The standard set of applications provided is never modified by the customer. Selective structuring of applications files and reports is allowed.
 - . Systems include data bases (parts numbers, prices, shipping weights, etc.) which may be updated.
 - . The automotive system is 8-bit microcomputer based. Retail hardware and tire systems are 16-bit minicomputer based. The warehouse system is 32-bit minicomputer based.
 - . Systems are designed to communicate with each other, to exchange purchase order, pricing, and inventory information.
 - . All systems are upgradable.
 - . A duplicate memory feature keeps two copies of all data entered. A "security" copy of all inventory and accounting records can be generated and removed from the customer site. This protects the customer from data loss in the event of a disaster.
- Triad's systems functions include inventory management, accounts payable, accounts receivable, general ledger, point of sale invoicing, purchasing, and profit planning.

TRIAD SYSTEMS CORPORATION

- All systems are sold with a 60-day, money-back guarantee. A system may be returned for any reason, and a full refund will be provided. Historically, 98.7% of Triad's customers have kept their systems after the evaluation period.
- Over 50% of Triad's employees are in sales, marketing, and customer support functions. All sales staff are paid on a commission only basis.
- After a one-year warranty, Triad offers users a System Support Agreement.
 - Services included in the warranty, and in the support agreement, include:
 - Preventive and remedial maintenance.
 - Hardware upgrades.
 - Software enhancements.
 - Management and employee training.
 - Hot line and on-site customer support.
 - Monthly fees average \$400. Annual fees typically are equal to 9% to 9½% of the current system purchase price.
 - Triad has one field service employee for every four systems installed, enabling a high level of customer support.
 - All customers purchase the System Support Agreement.
- Triad leases 60% of the systems it sells through its own leasing company, via six and seven year full payout leases.
- As of December 1981, a total of 3,268 Triad systems had been installed. Specific installations include:

Automotive parts systems	3,155
Warehouse systems	17
Hardware systems	82
Tire systems	14
- Automotive parts, hardware, and tire systems are marketed to small businesses with revenues over \$200,000 per year. The average customer has revenues in the \$500,000 range.
- Triad justifies the relatively high cost of its systems by demonstrating to the potential customer that a system will pay for itself in nine to 18 months. Systems are designed to enable the small businessperson to cut inventory, work fewer hours, and yet increase profits.

TRIAD SYSTEMS CORPORATION

- The first vertical market Triad entered was the automobile parts wholesale industry in 1972. This market still constitutes the majority of the company's revenue.
 - These systems are designed for "jobbers," small size wholesalers.
 - Of the 28,000 auto parts wholesale establishments in the U.S., 11% are Triad users. Of those who have computerized their operations, 75% use Triad systems.
 - These systems sell in the \$25,000 to \$150,000 range. The average price is \$53,000.
 - An optional price updating service, Telepricing, has just been introduced. Updates are automatically entered into customer systems from Triad's central computer, via phone lines.
 - Telepricing had 300 customers as of January 1982.
- Many automotive parts warehouse distributors acquired the Triad systems designed primarily for jobbers. In 1978, the company began developing a larger system specifically designed for warehouses. The first of these Triad 80 systems were installed in mid-1980.
 - During 1981, an interface for GEISCO's Transnet was introduced, allowing Triad 80 users to order directly from manufacturers. Also introduced were telecommunications packages that enable jobbers with Triad systems to place orders directly into warehouse distributor's Triad 80s.
 - The Triad 80 is designed for use by medium to large sized warehouse distributors (annual sales of \$5 million or more) in many industries. So far all sales have been to auto parts warehouses, but the company expects to market the system to other businesses as well.
 - Triad 80 systems sell in the \$380,000 to \$450,000 range. The average price is \$362,000.
- Triad began development of a turnkey system for retail hardware stores, home improvement centers, lumber and building materials businesses in 1979. The first production system was installed in January 1981.
 - Hardware systems are the fastest growing segment of the company's business.
 - Systems sell in the \$25,000 to \$125,000 range. The average price is \$67,000.
 - Triad has developed national account relationships with hardware product wholesalers to promote the benefits of these systems to their

retail dealer affiliates. Several of the largest wholesalers, including Cotter and Company (True Value), Ace, and Sentry, recommend Triad to their affiliates.

- In March 1981, Triad began installing systems designed for the retail tire industry. This is the newest vertical market addressed by the firm.
 - Systems sell in the \$25,000 to \$125,000 range. The average price is \$65,000.

INDUSTRY MARKETS

- Wholesale distributors account for 94% of Triad revenues. Retail distributors account for 6%.
- In selecting vertical markets to serve, Triad looks for a large population of independent business units, with difficult management tasks.

GEOGRAPHIC MARKETS

- Over 99% of Triad's customers are in the U.S. The company is just entering the international market.
 - Tridex Systems, the United Kingdom subsidiary, had sold seven systems as of January 1982.
 - Also in January 1982, Triad installed its first system in Canada.
- Triad has 160 offices throughout the U.S.

COMPUTER HARDWARE

- Triad uses an IBM System 34 for internal accounting functions.

COMPANY BRIEF

Primary Industry-Specific Market: Banking and Finance

Triangle Computer Services

200 West Mercer Avenue
Suite 300
Seattle, WA 98119
(206) 282-8466

CEO: Ben Schrenzel, President
Private Company
Founded: 1982

Employees: 7 (11/86)
Revenue (FYE 5/31/86): \$500,000*

The Company: Triangle Computer Services provides application software products and professional services to stockbrokers

Sources of Revenue:

- Application Software (90%)
- Professional Services (10%)

Key Products and Services:

- Application Software (Utilizes Data General running under AOS/VS and IBM and compatible microcomputers under MS-DOS)
 - TRIANGLE BROKER is a system that helps stockbrokers manage customer accounts. The system has been sold to national brokerage firms such as E.F. Hutton to run in its 450 branch locations, as well as large regional brokerage firms such as Gruntal and Security to run its 60 offices.
 - Triangle Computer Services either sells licenses to its customers for internal use only or, in cases like ADP, sells the right to remarket the product with value added.
 - The brokerage system has been adapted for the general sales environment for use in businesses such as auto dealerships and insurance, real estate, and property management companies. The sales management system is called CONTACT.
- Professional Services
 - Triangle Computer Services provides modification of its application products in addition to data processing consulting services to brokerage and sales firms

Target Industries:

- Stockbrokers (100% in FY 1986)

Geographic Markets:

- U.S. (100%)

*INPUT estimate

October 1986

COMPANY HIGHLIGHT

TRILOG ASSOCIATES, INC.
1700 Market Street
Philadelphia, PA 19103
(215) 564-3404

Donald J. Devine
Private Corporation
Acquisition by Comshare,
Pentamation Enterprise pending

Total Company and Computer Services Sales
as of FY ending 4/76: \$1,676,608

NUMBER OF EMPLOYEES engaged in computer services: 100

KEY PRODUCTS/SERVICES: Trilog markets primarily software products, which represent approximately 65% of sales. Facilities management contracts account for about 25% of sales and professional (software) services account for the remaining 10%. The two key products are:

- Employee Benefit Services (EBS): provide computerized employee benefit and pension plan accounting. This product has sold well over \$1 million since it was introduced in 1968, and is Trilog's most profitable line.
- Educational Administrative Services, (EAS): provide accounting services to school districts.

APPLICATIONS: Trilog specializes mostly in employee benefit and pension plan accounting, and school district accounting.

INDUSTRY MARKETS: Industries served are banking and education, which represent approximately 60% and 30% of sales respectively. The balance is composed of several industries.

GEOGRAPHIC MARKETS: Customers are scattered throughout the U.S., with slight concentration in financial centers such as New York City, Philadelphia and San Francisco. Trilog has no branch offices.

COMPUTER HARDWARE AND SOFTWARE: EBS and EAS are processed on the following IBM computers:

2	IBM	360/40	DOS	Philadelphia
1	IBM	360/30	DOS	Philadelphia

OVERALL ASSESSMENT AND TRENDS: Founded in 1966, Trilog was profitable in fiscal year 1976 with a net profit of \$32,707. Pentamation Enterprises is acquiring the EAS and facilities management portion of the firm for \$650,000 cash, and Comshare is acquiring the EBS portion. Both transactions should consummate by early September. During fiscal year 1976 EBS revenues were \$276,600. Comshare is acquiring this more profitable portion of the business, in exchange for 122,500 shares of Comshare stock. EBS will become part of personnel administration services offered by Comshare.

June/1976

H-40.1

INPUT

TRINZIC CORPORATION

101 University Avenue
Palo Alto, CA 94301
Phone: (415) 328-9595
Fax: (415) 321-7728

Chairman:	Robert N. Goldman
CEO:	James R. Gagnard
President:	Frank Chisholm
Status:	Public Corporation
Total Employees:	280
Total Revenue:	\$41,344,000
Fiscal Year End:	3/31/93

Key Points

- Trinzic, formed by the merger of AICorp, Inc. and Aion Corporation in September 1992, offers application development software products and services for business process automation.
- The acquisition of Channel Computing in March 1993 launched Trinzic into the client/server marketplace. Products acquired included Forest & Trees, an award-winning client/server data analysis and reporting tool for DOS and Windows, and InfoPump, a new middleware product for building and implementing data routing applications.
- In the first quarter of fiscal 1993, Trinzic announced InfoHub, the cornerstone of its emerging client/server product line. The cross-platform product is designed to access and update legacy information stored in relational and nonrelational data bases on mainframes using PC-based applications and front-end query and report writing tools.
- During fiscal 1993, Trinzic enhanced its international market presence with the acquisition of its distributors in Australia and the Benelux countries as well as the addition of several new distributors throughout Europe and South America.

**Company
Description**

Trinzic Corporation develops, markets, and supports software application development tools and services to automate business processes.

Trinzic's cornerstone products are used to develop business process automation (BPA) applications to automate business decision-making processes that require judgments and incorporate an organization's policies, experience, and knowledge. Examples of such business processes include insurance underwriting, product pricing, production scheduling, and credit authorization.

Trinzic currently has a combined installed base of over 1,300 customers, representing more than 10,000 software licenses worldwide for its BPA products, and over 4,000 customers and more than 25,000 licenses for its general-purpose client/server tools.

Trinzic was formed in September 1992 with the merger of AICorp, Inc. of Waltham (MA) and Aion Corporation of Palo Alto (CA), bringing together two leading vendors of application development software for business process automation.

- AICorp, formed in 1975, developed and marketed knowledge-based/CASE application development tools, including the KBMS programming environment and the INTELLECT natural language system. AICorp had approximately 170 employees at the time of the acquisition and revenues of \$19.7 million for the fiscal year ending March 31, 1992.
- Aion Corporation, founded in 1984, developed and marketed the Aion Development System (AionDS), a business process automation application development tool. Aion had approximately 155 employees at the time of the acquisition and annual revenues of about \$20 million.

Strategy

Trinzic is in the process of evolving its business and product line in response to an industry move toward distributed processing and an increasing need for client/server tools. Through the acquisition of Channel Computing, Trinzic expanded into the general-purpose client/server tools market.

Plans for fiscal 1994 include implementing a quality improvement program; continuing to leverage revenue-generating areas such as consulting services, the Affiliates Program, and international business; releasing new client/server products, including InfoHub; and new releases of InfoPump, Forest & Trees, AionDS, and KBMS.

Financials

Trinzic's fiscal 1993 revenue reached \$41.3 million, a 4% increase over fiscal 1992 revenue of \$39.8 million.

- Net losses of \$8.9 million for fiscal 1993 include restructuring charges of \$7.9 million and merger transaction costs of \$2.2 million associated with the AICorp/Aion merger and the Trinzic/Channel merger.
- In the five-year summary that follows, financials have been restated to reflect the pooling of interests of AICorp and Aion in September 1992 and the merger of Trinzic and Channel in March 1993:

**TRINZIC CORPORATION
FIVE-YEAR FINANCIAL SUMMARY
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	3/93	3/92	3/91	3/90	3/89
Revenue	\$41.3	\$39.8	\$39.9	\$29.2	\$20.2
• Percent change from previous year	4%	--	37%	45%	N/A
Income (loss) before taxes	\$(8.9)	\$(8.0)	\$(1.6)	N/A	N/A
• Percent change from previous year	(a) (11%)	(b) (400%)	N/A	N/A	N/A
Net income (loss)	\$(8.9)	\$(11.7)	\$(2.1)	\$(1.4)	\$0.1
• Percent change from previous year	24%	*(457%)	(50%)	*	N/A
Earnings (loss) per share	\$(0.49)	\$(0.70)	\$(0.14)	\$(0.11)	\$.01
• Percent change from previous year	30%	(400%)	27%	*	N/A

* Percent change exceeds 1,000%.

(a) Includes restructuring charges of \$7.9 million and transaction costs of \$2.2 million associated with the AICorp/Aion and Trinzic/Channel mergers.

(b) Includes \$1.2 million write-off associated with discontinuing the 1st-CLASS product line.

Approximately 49% of Trinzic's fiscal 1993 was derived from systems software product licenses, 37% from software maintenance fees, and 14% from training and consulting professional services. A three-year source of revenue summary follows:

TRINZIC CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)

	FISCAL YEAR					
	3/93		3/92		3/91	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software product licenses	\$20.4	49%	\$22.3	56%	\$26.7	67%
Maintenance	15.1	37%	13.2	33%	10.3	26%
Training, consulting, and other	5.8	14%	4.3	11%	2.9	7%
TOTAL	\$41.3	100%	\$39.8	100%	\$39.9	100%

Trinzic management attributes fiscal 1993 results to the following:

- Software product license revenue decreased nearly 9% due to a transition in the company's sales strategy away from mainframe products and toward PC and workstation products. Unit sales and revenues from higher priced mainframe products have declined, while unit sales and revenue from lower priced PC Starter Kits and workstation copies have increased.
- Maintenance revenue increased nearly 15%, due primarily to the increasing base of customers with installed systems who purchase maintenance agreements from Trinzic.
- Training, consulting, and other revenues increased by 37%, due primarily to the success of Trinzic's expanded consulting organization.
- Research and development expenses were \$6.4 million in fiscal 1993, compared to \$7.8 million in fiscal 1992. The decrease primarily reflects the elimination of redundant activities due to the merger, including discontinuing certain development activities, and a reduction in workforce.

Revenue for the three months ending June 30, 1993 reached nearly \$10.1 million, compared to \$9.4 million for the same period in 1992. Net income reached \$169,000, compared to net losses of \$1.3 million for the same period a year ago.

Market Financials

Trinzic markets its products across industry sectors and has clients in manufacturing, financial services, retail, insurance, transportation, telecommunications, and government.

Geographic Markets

Approximately 81% of Trinzic's fiscal 1993 revenue was derived from North America and 19% from international sources. A three-year geographic source of revenue summary follows:

**TRINZIC CORPORATION
THREE-YEAR SOURCE OF REVENUE SUMMARY
(\$ millions)**

ITEM	FISCAL YEAR					
	3/93		3/92		3/91	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
North America	\$33.3	81%	\$33.5	84%	\$35.4	89%
International	8.0	19%	6.2	16%	4.5	11%
TOTAL	\$41.3	100%	\$39.7	100%	\$39.9	100%

**Operations/
Structure**

Trinzic has North American offices in the metropolitan areas of Atlanta, Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, Minneapolis, New York, Philadelphia, Palo Alto, Toronto, and Washington, D.C.

International subsidiaries are in the U.K., Australia, Belgium, France, and Germany.

Employees

As of June 1993, Trinzic had 280 employees, segmented as follows:

Marketing, sales, and support services	177
Research and development	70
Corporate finance and administration	33
	<u>280</u>

Acquisitions

In March 1993, Trinzic acquired Channel Computing, Inc. of Portsmouth (NH) for approximately 1.9 million shares of Trinzic common stock in a pooling of interests transaction.

- Channel Computing was founded in 1988 to develop client/server applications that support more informed decision making. Its products include Forest & Trees[®], a client/server data analysis and reporting tool, and InfoPump[™], a middleware product for routing, integrating, and synchronizing dissimilar types of data.
- Channel Computing had approximately 34 employees at the time of the acquisition and annual revenue of about \$4 million.
- The acquisition added an installed base of over 4,000 customers and more than 25,000 software licenses.

During fiscal 1993, Trinzic acquired its distributors in Australia and Belgium.

Key Products and Services

Trinzic offers a range of application development tools and services that assist companies in developing client/server applications.

Software Products:

The Aion Development System (AionDS) is a business process automation application development tool for building, delivering, and maintaining logic-intensive applications. It is oriented toward applications that have a higher transaction volume or are embedded in legacy systems.

- Data base interfaces are available for DB2, IMS DB, VSAM, DBC/1012, SQL/DS, DB2/2, ORACLE, MS SQL Server, and Sybase SQL Server.
- AionDS runs on IBM mainframes, IBM and compatible PCs, and Sun SPARC systems. Operating systems supported include MVS, VM, MS-DOS, OS/2, Windows 3 and Sun OS.
- Prices for AionDS range from \$105,000 to \$150,000 for development copies, \$70,000 to \$105,000 for server versions, and \$40,000 to \$60,000 for execution systems.
- There are currently over 800 customers of AionDS worldwide.

KBMS provides a complete programming environment for the development, implementation, and maintenance of automated business process applications.

- KBMS uses an inference engine that implements a set of reasoning methodologies and applies them to a knowledge base. KBMS also supports object-oriented programming techniques.
- Facilities for interaction by the user include a graphical user interface, a conversational English language interface, and a traditional forms-oriented interface.
- KBMS also includes application developer and application program interfaces.
- Data base interfaces are available for DB2, IMS DB, CA/IDMS DB, DBC/1012, ADABAS, SQL/DS, VSAM, KDB (KBMS), Sequential, DB2/2, MS SQL Server, ORACLE, Rdb, Sybase SQL Server, and RMS.
- KBMS runs on IBM mainframes, IBM and compatible PCs, DEC VAX systems, and Sun SPARC systems. Operating systems supported include MVS, VM, VMS, OS/2, Windows 3, and Sun OS.
- Prices for the KBMS system range from \$105,000 to \$150,000 for development copies, \$70,000 to \$105,000 for server versions, and \$40,000 to \$60,000 for execution systems.
- There are currently over 700 customers of KBMS worldwide.

INTELLECT is a natural language system that enables users to access information stored in corporate data bases through the use of conversational English questions. While the natural language technology of INTELLECT is embedded in KBMS, INTELLECT is available as a standalone product on IBM mainframes and PCs.

- Data base interfaces are available for DB2, IMS DB, CA/IDMS DB, DBC/1012, ADABAS, VSAM SQL/DS, KDS (KBMS), Sequential, DB2/2, MS SQL Server, ORACLE, Rdb, Sybase SQL Server, and RMS.
- INTELLECT is available for IBM mainframes, IBM and compatible PCs, DEC VAX systems, and Sun SPARC systems.
- INTELLECT system prices range from \$70,000 to \$105,000 for development copies, \$50,000 to \$75,000 for server versions, and \$40,000 to \$50,000 for execution systems.

Forest & Trees is a decision support tool used to develop executive information systems and ad hoc query and reporting applications.

- Forest & Trees collects, combines, monitors, analyzes, and acts upon information from a variety of sources, including PC spreadsheets and data bases, data base servers, and host systems.
- Forest & Trees requires 80286 or higher workstations with DOS version 3.0 or later, and Windows 3.0 or later.
- The standard edition of Forest & Trees, which interfaces with Lotus 1-2-3, Excel dBase, R:BASE, Paradox, DataEase Q&A, Btrieve, Lotus Notes, and ASCII flat files, is priced at \$695.
- The client/server edition, which provides access to additional server-based data bases, including DB2 via the Micro Decisionware Gateway, Ingres, Oracle Server, Gupta SQL Server, and Microsoft/Sybase SQL Server, is priced at \$790.
- Over 25,000 copies of Forest & Trees have been shipped, bringing in annual product line revenues in excess of \$3.4 million.

InfoPump is a client/server application development tool to develop and implement data routing applications that enable numerous types of data, in different formats, to be moved from one data base to another.

- InfoPump components include:
 - InfoPump Manager, a Windows-based application development environment
 - Internal Database, which store instructions necessary for the data routing and transformation processes
 - InfoPump Server, which periodically downloads information from the source data bases, performs necessary data transformation operations, and moves the data to a destination data base where it is made accessible to the EIS, DSS, or other end-user application
 - Data base interfaces for IBM DB2/2, DBM, and SQL/400; Lotus Notes; Novell NetWare SQL; Rdb; Gupta SQLBase; Microsoft SQL Server; and Sybase
- InfoPump requires an OS/2-capable server and a Windows-capable workstation 386 or higher, Microsoft or Sybase SQL Server version 1.1 or later.

- A copy of InfoPump must be licensed for each server computer on the network, at prices ranging from \$20,000 to \$25,000. A copy of Microsoft/Sybase SQL Server must be licensed separately at additional cost. Additional data base interfaces and InfoPump Managers are licensed separately, at \$2,500 per server data base.
- InfoPump was released in March 1992 and began distribution through the Trinzic sales force in April 1993.

InfoHub, released in 1993, is a mainframe-based system that allows users to transparently access and update a range of host-based relational and nonrelational data bases using many PC-based applications or front-end query and report writing tools.

- InfoHub reduces costs associated with downsizing, promotes sharing and reuse of data by making mainframe data as accessible as server data, and offers PC users flexible data access while maintaining control over the data.
- Hardware/software requirements for InfoHub include the following:
 - Mainframe environment: CICS version 1.7 or higher, VTAM version 3.2 or higher, and MVS/XA or MVS/ESA
 - Gateway environment: Micro Decisionware software
 - Network environment: Any Micro Decisionware-supported network, including Novell, LAN Manager, and others
 - Client environment: 386 or higher or equivalent PC running Windows version 3.1 and client software must be ODBC compliant

Support Services:

Trinzic offers training and consulting services to help customers in the development and delivery of their client/server applications created using Trinzic's software tools.

- Training classes are offered at Trinzic training centers as well as at client locations. Class prices range from \$375 to \$2,000 per student.
- Consulting services are available at \$1,500 per day. Package rates are available.

Trinzic's software tools include 90 days of maintenance. An annual service fee is available after expiration of the initial maintenance

period for prices ranging from 15% to 20% of the then-current software license fee.

Marketing and Sales

Trinzic markets its products in North America through a direct sales force with sales and support offices in 13 cities.

Trinzic markets its products outside of North America through wholly owned subsidiaries in the U.K., Germany, France, Australia, and Belgium, and through independent distributors in Brazil, Italy, Finland, Spain, and South Africa.

Trinzic also has various strategic marketing relationships with over 25 computer hardware manufacturers, software vendors, and consulting organizations, as described in the Alliances section below.

Alliances

Trinzic has established the Trinzic Affiliates Program to extend its reach into a variety of markets and to maintain product compatibility with other industry leaders. These include the following:

- IBM's Business Partner Application Specialist Program
- DEC's Complementary Software House and Complementary Marketing Programs
- Oracle's Independent Solutions Vendor Program
- The Sybase Synergy Partnership
- The Sun Catalyst Program

Trinzic also has partnerships with Borland, Lotus, Microsoft and others for PC file servers and spreadsheets; and Oracle, Sybase, Microsoft, Ingres, Gupta, Hewlett-Packard, IBM, and Novell for data bases.

Trinzic has joint marketing agreements with various vendors, including Stone & Webster Engineering, and Micro Decisionware.

Trinzic and Price Waterhouse, Andersen Consulting, and Coopers & Lybrand have strategic alliance agreements that provide for use of Trinzic's products for consulting engagements and internal production and the ability to be embedded within commercial products.

Clients

A sample of Trinzic's customers include Campbell Soup Company, La-Z-Boy Chair Company, General Mills Restaurants, Hudson's Bay, St. Luke's Episcopal Hospital, York International, TRW, Royal Bank of Canada, Carrier, Mutual of New York (MONY), Chevron, Blue Cross/Blue Shield of Missouri, Bankers Trust, International Flavors and Fragrances, Hewlett-Packard, Prudential Insurance, Pitney Bowes, Schlumberger, Marie de Paris, Deutsche Aerospace, British Telecom, Kolnischer Ruck, Norwich Union, BBV, Barclays Bank, Banque de France, Robeco, and SIP.

Competitors

Trinzic's competitors, by product line, include the following:

- Forest & Trees competes in two market segments: application development tools and end-user query and reporting tools. Given the increased competition from vendors of general-purpose application development tools such as Powersoft, Cognos, and Gupta, Forest & Trees has been positioned as an EIS/DSS application builder rather than a general application development tool. Trinzic expects increased competition in the ad hoc query and report tools segment from client/server tools vendors like Gupta and PC data base vendors, especially Microsoft and Borland, as they deliver new Windows-based data bases and report writers.
- InfoPump's principal direct competitor is Extract from Evolutionary Technologies. However, Extract is targeted at mainframe environments and does not currently support any server-based relational data bases.
- AionDS and KBMS have competition in several different areas, including direct international competition from vendors that sell business process automation and 4GL products.

COMPANY BRIEF

Cross Industry: Systems Software

True Basic, Incorporated

39 South Main Street
Hanover, NH 03755
(603) 643-3882

CEO: Leo L. Kornfeld, President
Private Company
Founded: August 1983

Employees: 20 (10/86)
Revenue (FYE 12/31/85): \$2 million*

The Company: Develops and markets the True BasicTM language

Sources of Revenue:

- Systems Software (100%)

Key Products:

- Systems Software Products
 - Hardware independent language (True Basic)

Target Industries:

- Secondary education

Geographic Markets:

- U.S. and Non-U.S.
- Sales Office: Hanover (NH)

Other:

- True Basic plans to offer educational software integrated with textbooks
- Company founders include: John G. Kemeny and Thomas E. Kurtz, co-inventors of the BASIC computer language

*INPUT estimate

October 1986

Vendor Profile

A Publication from INPUT's Vendor Analysis Program

July 1997

Trusted Information Systems

3060 Washington Road (Rt. 97)
Glenwood, MD 21738
U.S.

Phone: (301) 854-6889
Fax: (301) 854-5363
Internet: <http://www.tis.com>

Unit 8, Commerce Park
Brunel Road
Theale, Berks RG74AE
U.K.

Phone: 44 1189 30 4413
Fax: 44 1189 30 4412

Chairman, President, & CEO: Stephen T. Walker
Status: Public
Employees: 293 (7/97)
Revenue: \$26,370,081
Fiscal Year End: 12/27/96

Firewall and Gauntlet Global Virtual
Private Network (GVPN) products.

Key Points

- Trusted Information Systems (TIS) is a global provider of full-service security solutions for computer networks.
- In June 1997, TIS announced that it is developing security management tools designed for use with Microsoft® Proxy Server and the next version of Windows NT® Server.
- In April 1997, TIS launched its next generation of Gauntlet® network security solutions, including the new Gauntlet

Company Description

TIS, founded in 1983, provides full-service security solutions for protection of computer networks, including global Internet-based systems, internal networks, individual workstations, and laptops.

In October 1996, TIS completed its initial public offering of 2.9 million shares of common stock, raising approximately \$45.4 million. Out of the proceeds, the company repaid about \$4.9 million if its short-term borrowings and notes payable.

TIS currently has two operating divisions: the Commercial Division and the Advanced Research and Engineering ("AR&E") Division.

- The Commercial Division derives revenue from the company's Gauntlet® family of firewall products, from its commercial consulting services, and from its RecoverKey™ exportable cryptography enabling products. About 70% of the company's revenue is derived from the Commercial Division.
- The Advanced Research and Engineering Division consists primarily of research, development, and consulting in computer and related security systems.

Operations and Structure

Trusted Information Systems is headquartered in Glenwood (MD).

The company maintains offices in Los Angeles and Mountain View (CA), McLean (VA), and Rockville (MD).

The company's key executives are listed in Exhibit 1.

Exhibit 1

Trusted Information Systems Key Executives

Name	Title
Stephen T. Walker	Founder, President, CEO, Chairman, Director
Martha A. Branstad	EVP, Director, COO, President of AR&E Division
Harvey L. Weiss	EVP, Director & President, Commercial Division
Homayoon Tajalli	EVP, General Manager, Cryptographic Products
Ronald W. Kaiser	EVP, CFO
Fredrick M. Avolio	VP, Technology Marketing
Charles Baggett	VP, Commercial Consulting
Gina Dubbe	VP, Sales & Marketing
R. William Thompson	VP, Business Development

Source: Trusted Information Systems

TIS has wholly-owned subsidiaries as follows:

- Trusted Information Systems Limited, located in Berkshire (U.K.), was established in 1992 to conduct activities in the U.K.
- Trusted Information Systems GmbH, located in Munich (Germany), was established in 1996 to conduct activities in Germany.

Employees

As of July, 1997, TIS had approximately 293 employees worldwide, segmented as follows:

Marketing and sales.....	70
Customer support.....	41
Research and development	109
Computer operations.....	12
General and administrative.....	61
	293

The company currently has 276 employees located in the U.S. and 17 in Europe.

Company Strategy

TIS's mission is to provide computer and communications security solutions that enable corporations and government information systems to use the power of the Internet securely. Key elements of the company's strategy are to:

- Provide comprehensive security solutions at all levels
- Increase market penetration through multiple channels
- Expand consulting services
- Leverage government research and engineering into commercially available products

Financials

Total 1996 revenue reached \$26.4 million, a 46% increase over 1995 revenue of \$18.1 million. The company recorded net losses of \$2.2 million, compared to a net income of \$2.3 million in 1995.

A five-year financial summary is shown in Exhibit 2.

Research and development expenditures were approximately \$3.9 million (15% of revenue) in 1996, compared to \$1.1 million (6% of revenue) in 1995 and \$0.6 million (5% of revenue) in 1994.

Exhibit 2

Trusted Information Systems Three-Year Worldwide Financial Summary (\$ Millions except per-share and per-employee data)

Item	Fiscal Year				
	1996	1995	1994	1993	1992
Revenue	\$26.4	\$18.1	\$13.1	\$8.8	\$6.8
• Percent change from previous year	46%	38%	N/A	29%	N/A
Income (loss) before taxes	\$(3.6)	\$2.3	\$1.2	\$0.07	\$0.1
• Percent change from previous year	(259%)	90%	*	(42%)	N/A
Net income (loss)	\$(2.2)	\$1.3	\$0.7	\$0.4	\$0.7
• Percent change from previous year	(269%)	86%	99%	(52%)	N/A
Revenue per employee	\$90,000	N/A	N/A	N/A	N/A
Earnings (loss) per share	\$(0.25)	\$0.15	\$0.08	\$---	\$0.01
• Percent change from previous year	(267%)	88%	N/A	N/A	N/A

Source: Trusted Information Systems

* Percent change exceeds 1,000%.

Interim Results

Revenue for the six months ending June 27, 1997 reached \$17.5 million, an increase of 82% over revenue of \$9.6 million for the same period in 1996. The company experienced a net loss of \$3.1 million for the quarter, compared to a net loss of \$0.5 million the previous year.

- Losses were attributed to the expansion of the international marketing and distribution efforts and due to firewall and RecoverKey™ development activities.

- Commercial products revenue rose to \$11.0 million, an increase of 195% over revenue of \$3.7 million the previous year.
- Government contracts revenue was \$4.8 million for the period, compared to \$5.4 million during the same period in 1996.
- Commercial consulting services revenue rose to \$1.1 million for the period, from \$0.5 million during the same period in 1996.

Revenue Analysis by Product/Service

Approximately 52% of TIS's 1996 worldwide revenue was derived from commercial products, 42% from government contracts, and 6% from commercial consulting.

- Commercial product revenue increased 218% primarily due to increased sales of licenses of Gauntlet Internet Firewalls directly to customers and through the company's resellers.

- Government contract revenue fell 10% primarily due to the company's reallocation of personnel to its commercial activities.
- Commercial consulting services revenue increased 12% primarily due to the completion of a substantial number of commercial consulting contracts during the third and fourth quarters of 1996.

Exhibit 3 displays a three-year source of revenue summary.

Exhibit 3

**Trusted Information Systems
Three-Year Source of Worldwide Revenue Summary
(\$ Millions)**

Product/Service	Fiscal Year					
	1996		1995		1994	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Commercial products	\$13.6	52%	\$4.3	24%	\$1.0	8%
Government contracts	11.1	42%	12.3	68%	11.2	86%
Commercial consulting	1.7	6%	1.5	8%	0.9	7%
Total	\$26.4	100%	\$18.1	100%	\$13.1	100%

Source: Trusted Information Systems

Geographic Markets

The majority of TIS's revenue is derived from the U.S. Revenue from the company's European subsidiaries in 1996 was 4.0% of total revenue, compared to 3.1% of revenue in 1995.

Key Products and Services*Products*

- In July 1997, TIS announced that its firewall technology is rated #1 in use and security on the Internet.
- In June 1997, TIS announced that the next version of Microsoft Proxy Server is being built with a security architecture that will

complement the TIS Gauntlet® Internet Firewall.

- In February 1997, TIS announced the availability for downloading of ForceField™ at its Web site. ForceField is TIS's new Web server security product that uses the Gauntlet firewall technology to protect sensitive data without compromising the high level of performance required of a Web server.
- The *Internet Firewall Toolkit* is a research-based collection of modules that can be used to build a firewall. It serves as the foundation for the company's Gauntlet family of firewall products and is available

free on the Internet for use, but not for resale. This product was introduced in the fourth quarter of 1993.

- The *Gauntlet Internet Firewall* is an application gateway firewall that protects internal networks from external intrusion. This product was introduced in the second quarter of 1994.
- The *Gauntlet Intranet Firewall* was introduced in the second quarter of 1996. It is the distributed firewall technology that protects departmental intranets from unauthorized access by internal users.
- The *Gauntlet Net Extender* is the distributed firewall technology that provides secure communications over the Intranet and WANs to and from remote networks through the use of encryption. This product was introduced in the second quarter of 1996.
- The *Gauntlet PC Extender* provides secure communications over the Internet and other public networks to and from mobile PC users.
- RecoverKey™ is the world's first total solution for user-controlled management of strong encryption.

Commercial Consulting

TIS offers a range of consulting in information security policies and planning. The following commercial consulting services are offered:

- Technology research services
- Consultation on security issues associated with products and services, corporate information security policy development, architectural and diagnostic security analysis, and firewall configuration

- Training for corporate network and security administration personnel

Marketing and Sales

The company employs complementary domestic and international distribution channels, including direct sales, resellers, and telesales, to achieve market penetration of its network security products and services.

Clients

TIS's clients include Chrysler Corporation, Microsoft Corporation, NationsBank Corporation, Royal Dutch Petroleum Co., and Swiss Bank Corporation.

TIS's AR&E Division currently has major contracts with three agencies of the U.S. government: the National Security Agency, Air Force Rome Laboratories, and the Defense Advanced Research Projects Agency.

Alliances

TIS has established relationships with Atalla, IBM, Intel, Symantec, Oracle, Microsoft, Entrust Technology, Hewlett-Packard, McAfee, PC Guardian, Philips Crypto, Rainbow Technologies, Secured Communications Canada, Inc., Silicon Graphics, and BBN Planet.

In July 1997, TIS and Querisoft announced that Querisoft's SecureFile™ fully supports TIS's RecoverKey™ Cryptographic Service Provider (CSP), creating increased opportunities for using and managing strong encryption worldwide.

In July 1997, TIS announced a development partnership with Computer Associates International (CA). TIS's Gauntlet Internet Firewall 4.0 will be integrated into CA's enterprise management solution, Unicenter TNG.

Also in July 1997, TIS announced the licensing of its Key Recovery Technology to FTP Software, Inc. for incorporation into its suite of VIP Networking™ Products.

In April 1997, TIS and Price Waterhouse entered into an alliance agreement to assist each other in providing clients with network security solutions. TIS will provide Price Waterhouse with its firewall software and train Price Waterhouse security specialists on installation, operation, and day-to-day maintenance of the Gauntlet product.

In January 1997, TIS and IBM announced a patent and software license agreement that will accelerate the use of strong encryption. IBM acquires the right to license and distribute TIS's patented RecoverKey™ technology within the IBM SecureWay Key Management Framework, as well as in IBM products.

Competition

TIS's major firewall competitors include CheckPoint Corporation and Raptor Systems.

acquired by McAuto (1984)

FINANCIAL UPDATE TO HIGHLIGHT DATED OCTOBER 1982

TYMSHARE, INC.
20705 Valley Green Drive
Cupertino, CA 95014
(408) 446-6000

Thomas J. O'Rourke
Chairman and President
Public Corporation, NYSE
Total Employees: 3,400
Total Revenue, Fiscal Year End
12/31/82: \$297,025,000
Computer Services Revenue:
\$211,000,000*

TYMSHARE, INC.
FIVE-YEAR FINANCIAL SUMMARY
(\$ thousands, except per share data)

FISCAL YEAR ITEM	1982	1981	1980	1979	1978
Revenue	\$ 297,025	\$ 289,687	\$ 235,854	\$ 193,092	\$ 149,559
. Percent increase from previous year	3%	23%	22%	29%	48%
Income before taxes	\$ 11,758	\$ 25,706	\$ 34,393	\$ 26,064	\$ 19,394
. Percent increase (decrease) from previous year	(54%)	(25%)	32%	34%	23%
Net income	\$ 8,809	\$ 15,670	\$ 18,743	\$ 14,644	\$ 10,594
. Percent increase (decrease) from previous year	(44%)	(16%)	28%	38%	32%
Earnings per share	\$ 0.73	\$ 1.33	\$ 1.81	\$ 1.53	\$ 1.15
. Percent increase (decrease) from previous year	(45%)	(27%)	18%	33%	26%

- Tymshare reports revenue in two segments, Computer Information Services and Telecommunications Services (primarily Tymnet). A five-year summary follows:

*INPUT estimate

TYMSHARE REVENUE BY
SERVICE TYPE
(\$ millions)

	<u>Computer Information Services</u>	<u>Telecommunications Services</u>
1982		
• Revenue	\$232.9	\$63.7
• Operating profit*	8.2	9.0
1981		
• Revenue	\$246.5	\$42.5
• Operating profit*	25.2	5.7
1980		
• Revenue	\$211.0	\$24.4
• Operating profit*	35.9	4.8
1979		
• Revenue	\$176.2	\$16.2
• Operating profit*	29.1	3.1
1978		
• Revenue	\$138.5	\$10.4
• Operating profit*	21.9	1.3

*Operating profit: prior to allocation of general corporate expenses.

SOURCE OF REVENUE

- INPUT estimates Tymshare's 1982 revenue was derived as follows:

	<u>Percent of Total</u>	<u>Revenue (\$ millions)</u>
Processing services	63%	\$188
Turnkey systems	3	10
Professional services	3	8
Software products	2	5
Other (telecommunications, hardware, maintenance)	<u>29</u>	<u>86</u>
	100%	\$297

Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

September 1996

TuneUp.com, Inc.

Chairman: Patrick Dane
CEO: Michael Walter
President & COO: Emerick Woods
795 San Antonio Road
Palo Alto, CA 94303
Phone: (415) 856-9956
Fax: (415) 856-8778
Internet: <http://www.tuneup.com>



Status: Private
Employees: 27
Fiscal Year End: 12/31/95

Company Description

TuneUp.com claims to be the first one-stop, on-line PC service center on the World Wide Web. Founded in 1995 by Pat Dane and Michael Walter, the company delivers a range of PC services to subscribers via the Internet.

- To meet the aftermarket demand for ease of installation, use, and maintenance of PCs, TuneUp.com offers a combination of new tools new component-sized applications, and customer service interfaces, referred to as Serviceware™.

- Using that approach, which it pioneered, TuneUp.com provides subscribers with on-line delivery of essential services that it believes are smaller, faster, more affordable, and less hassle-prone than traditional software products.

Organization and Structure

TuneUp.com is headquartered in Palo Alto (CA).

The company's key executives are listed on the following page.

TuneUp.com Key Executives

Name	Title
Patrick Dane	Chairman
Michael Walter	CEO
Emerick Woods	President and COO
Jeffrey Mason	VP, Engineering and Technology
Lowell Forte	VP, Operations

Company Strategy

TuneUp.com believes that utility software is currently viewed by most consumers as too expensive, in terms of dollars paid and time required to install it and to learn how to use it to its fullest potential.

- Consequently, TuneUp.com estimates that less than 10% of all users have invested in utility software. Fewer still back up their important files on a regular basis or use the documentation that comes with new software.
- If a user gets stuck, the current method of choice for obtaining an answer is a telephone call—an expensive proposition for manufacturers and, ultimately, end users.

Beginning in September, 1996, the service center at www.tuneup.com will provide subscribers with on-line services at an initial rate of only \$39.95 per month—less than \$500 per year.

- Services will include delivery of serviceware that will perform virus protection and file virus repair; disk repair and optimization; file storage and automatic data file back-up; automatic notification via E-mail when new software, computer, and/or driver updates from participating vendors become available; on-line customer service and technical support; a virtual magazine rack

offering free trial issues and special discount subscriptions to Ziff-Davis publications about computers and the Internet; and superior content provided by recognized authors and commentators.

- In the near future, training and hardware repair via a worldwide network of field service associates will be available as well as serviceware that will handle application removal, free trials of software, version updates, bug fixes, and a parts and accessories department.

Financials

TuneUp.com is a privately held company financed in part by the Mayfield Fund, a leading Silicon Valley venture capital firm.

Employees

TuneUp.com currently has 27 employees.

Key Products and Services*PCTuneUp™*

For Windows 95 users, this service ensures that the computer is running smoothly by performing anti-virus scan and repair of file viruses and disk optimization using technology from Norton AntiVirus and Norton Utilities. Subscribers log onto the TuneUp.com Web site to download the PCTuneUp serviceware™, then run it off line, from the security of their own hard drive. Subscribers visit the Web site monthly to download current virus solution updates.

TuneUpDate™

With TuneUpDate, TuneUp.com subscribers complete a user profile at the Web site, and are automatically notified via E-mail when new software, computer, and/or driver updates become available for their systems from participating vendors.

DataGarage™

DataGarage is an on-line data backup service with high security that ensures safe-keeping for all files. The service is available in different sizes—5MB, 10MB, and 30 MB for \$2.95/month, \$4.95/month, and \$9.95/month, respectively. Subscribers can choose the size of their "garage" while on-line, order services, or choose automatic E-mail notification service. DataGarage is a premium service that TuneUp.com subscribers can add to their basic subscription. Availability is scheduled for October 1, 1996.

MagazineRack™

TuneUp.com offers free trial issues and special discount subscriptions to Ziff-Davis publications, leading magazines about computers, and the Internet.

TuneUpTalk™

This service allows TuneUp.com subscribers to participate in live, on-line question-and-answer sessions with TuneUp.com employees, industry experts, and other subscribers.

StayTuned with Pat & Mike™

This is a biweekly column on the TuneUp.com Web site about PC-related topics by the creators of TuneUp.com—Pat Dane and Mike Walter.

Customer Service

On-line customer service with access to TuneUp.com's Customer Service department assists customers with their subscriptions or other services. All requests are submitted by the subscriber using an on-line form and are tagged by different levels of urgency.

Technical Support

The company offers on-line technical support with access to TuneUp.com's Technical Support department to assist subscribers with

computer problems. All requests are submitted by the subscriber using an on-line form and are tagged by different levels of urgency.

Searchable FAQs (Frequently Asked Questions)

This service allow subscribers to search through TuneUp.com's database of solutions to frequently asked questions.

Suggestion Box

Suggestion Box supplies E-mail feedback to TuneUp.com to let the company know what subscribers think about the services currently available and about services they would like to see offered.

Partners

TuneUp.com has developed a partnership-based business model whereby the company has made exclusive arrangements with leaders in various segments of the PC software industry to key components of its service.

- In order to provide customers with the most current repair and maintenance software, TuneUp.com has developed relationships with leading utilities software developers. Symantec/Norton Utilities is continually developing key computer care programs, including anti-virus, defragmentation, optimization, and analysis software.
- In addition, Hewlett-Packard and other participating computer software and hardware manufacturers will be making their new software, computer, and/or driver updates, patches, and fixes available from the TuneUp.com Web site via the TuneUpDate™ serviceware. Based on subscriber profiles, TuneUpDate will automatically notify subscribers via E-mail

when new information becomes available that matches their configurations.

- In addition to the Serviceware solutions described above, Tuneup.com plans to deliver content from recognized authors and commentators. Jim Aspinwall (co-author of *Troubleshooting your PC*) and nationally syndicated columnist and radio personality Kim Komando will be featured on the site and available to answer users' questions. A chat service, TuneUpTalk™—where users can compare notes and help each other—will also be featured.
- TuneUp.com is also working with various companies in order to expand its distribution model; these range from Internet Service Providers to telephone companies.

To date, TuneUp.com has partnered with a range of companies in order to offer expanded services and technologies, including Symantec Corporation, Connected Corporation, Ziff-Davis Publishing Company, Hewlett-Packard, First Floor Software, and TestDrive.

Competition

TuneUp.com has no direct competition currently in this fledgling market. However, the company does compete with conventional, off-the-shelf software products available at retail and some that are available via the Internet.

INPUT Assessment

TuneUp.com's strengths include:

- First-to-market advantage
- Partnerships and support of major industry players (Symantec, HP)
- Company management experience in the computer industry

Future challenges include:

- Promoting company services to potential users
- Improvement and expansion of the services offered

COMPANY HIGHLIGHT

TYMSHARE, INC.
20705 Valley Green Drive
Cupertino, CA 95014
(408) 446-6000

Thomas J. O'Rourke,
Chairman and President
Public Corporation, NYSE
Employees: 3,600
Total Revenue, Fiscal Year End
12/31/81: \$289,687,000
Computer Services Revenue:
\$225,000,000*

THE COMPANY

- Since its founding in 1966, Tymshare has evolved from a remote computing services company specializing in scientific and engineering applications into a multiservice vendor. In addition to providing processing services, Tymshare sells data communications services, markets turnkey systems, software and hardware products, and provides consulting and third-party maintenance services.
- Tymshare's 1981 revenue was \$289.7 million, a gain of 23% over 1980 revenue of \$235.9 million. Pretax income, net income, and earnings per share declined for the first time in 11 years. A five-year financial summary follows:

TYMSHARE, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	1981	1980	1979	1978	1977
Revenue	\$289,687	\$235,854	\$193,092	\$149,559	\$101,174
• Percent increase from previous year	23%	22%	29%	48%	24%
Income before taxes	\$ 25,706	\$ 34,393	\$ 26,064	\$ 19,394	\$ 15,808
• Percent increase (decrease) from previous year	(25%)	32%	34%	23%	20%
Net income	\$ 15,670	\$ 18,743	\$ 14,644	\$ 10,594	\$ 8,008
• Percent increase (decrease) from previous year	(16%)	28%	38%	32%	19%
Earnings per share	\$ 1.33	\$ 1.81	\$ 1.53	\$ 1.15	\$ 0.91
• Percent increase (decrease) from previous year	(27%)	18%	33%	26%	18%

*INPUT estimate

I of 12
October 1982

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INPUT

TYMSHARE, INC.

- Profit declines in 1981 were attributed to a few major factors:
 - Telecommunication rate increases imposed by AT&T that could not be passed on to Tymshare customers under fixed price contracts.
 - Decreased revenue and earnings from Tymshare's credit card processing operations.
 - Higher costs and reduced growth in remote computing services.
- In order to improve profits, Tymshare has closed or sold several operations.
 - Tymshare's fuel oil processing business was sold in 1981 to a group of investors.
 - Marketing and development activities on MANUFACTS, a turnkey system for manufacturers, have been cancelled.
 - OPTION, an automatic teller machine pilot network program in Southern California, was terminated after two years in development.
 - Tymshare sold its Medical Systems Division to McDonnell Douglas Automation (MCAUTO) in April 1982 for an estimated \$7 to \$8 million. Annual revenue of the division was about \$15 million.
 - In October 1982 a portion of Tymshare's Transaction Services Division, the credit card processing segment acquired in 1977, was sold to its largest competitor, First Data Resources, an American Express subsidiary. For the first nine months in 1982, credit card processing revenue was \$19 million. American Express purchased the operation for an estimated \$9 to \$10 million.
- In spite of Tymshare's efforts to eliminate marginal or unprofitable operations, recovery has been slow. For the nine months ending September 30, 1982, Tymshare posted revenue of \$231.7 million versus \$218.9 million from the prior year, or a gain of 6%. Net income was \$11.1 million (versus \$16.1 million) and earnings per share were \$0.93 (versus \$1.37).
- Closing 1982 with improved revenue and profits does not look favorable at this time. Traditionally Tymshare has not had a strong fourth quarter. INPUT estimates Tymshare's 1982 revenue will be around \$300 million with earnings per share in the \$1.00 to \$1.20 range.
- Acquisitions completed by Tymshare since January 1982 were:
 - Multi-Point Communications Corporation, a provider of multipoint distribution services in the Chicago area, was acquired in early 1982. Multi-Point owned and operated a microwave transmission station that distributes Reuters Financial Information and Showtime pay TV signals.

TYMSHARE, INC.

- Travel Systems Inc., of Austin (TX) was acquired in March 1982. Travel Systems marketed a fully integrated, stand-alone accounting system for travel agencies. It was merged into Tymshare's Travel Management Services, an organization established last year after the acquisition of ITT Electronic Travel Services.
- Tymshare's current organizational structure is presented in Exhibit A.
- Tymshare reports revenue in two segments, Computer Information Services and Data Communications Services (Tymnet). A four-year summary follows:

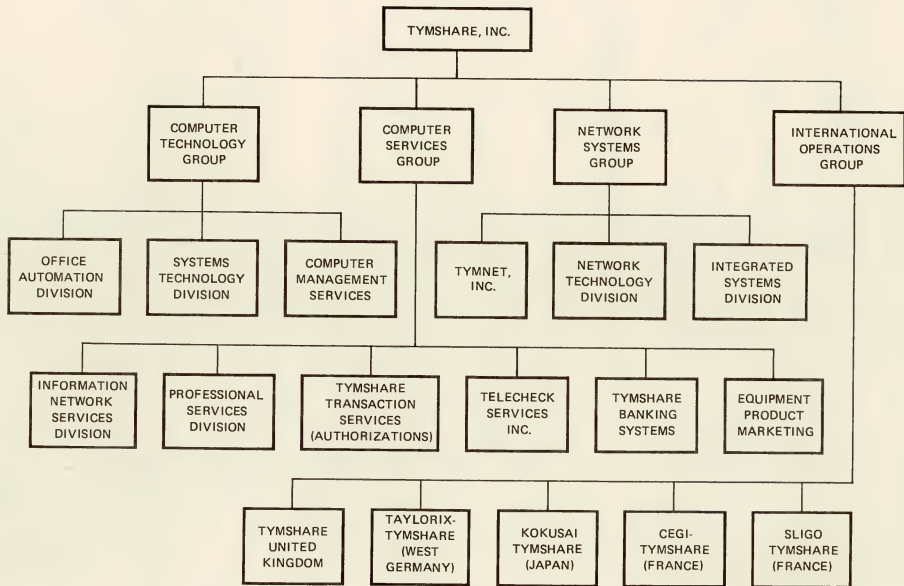
TYMSHARE REVENUE BY
SERVICE TYPE
(\$ millions)

	Computer Information Services	Data Communications Services
1981		
• Revenue	\$ 246.5	\$ 42.5
• Operating profit*	25.2	5.7
1980		
• Revenue	\$ 211.0	\$ 24.4
• Operating profit*	35.9	4.8
1979		
• Revenue	\$ 176.2	\$ 16.2
• Operating profit*	29.1	3.1
1978		
• Revenue	\$ 138.5	\$ 10.4
• Operating profit*	21.9	1.3

*Operating profit: prior to allocation of general corporate expenses.

- Major competitors of Tymshare's services are:
 - Remote Computing: GEISCO (General Electric), Business Information Services (CDC), National CSS (Dun & Bradstreet), Automatic Data Processing, Computer Sciences, and Electronic Data Systems.
 - Credit Authorization Services: Telecredit and JBS.
 - Accounting/Tax Services: CCH Computax, Computer Language Research (FASTAX), Computer Sciences, and Reynolds and Reynolds.
 - Data Communication Services: GTE Telenet, AT&T, and United Telecom (UNINET).

EXHIBIT A
TYMSHARE ORGANIZATION



TYMSHARE, INC.

KEY PRODUCTS AND SERVICES

- Tymshare's revenue by type of service is estimated as follows:

TYMSHARE REVENUE SOURCES, 1981

<u>Service Type</u>	<u>Percent of Total</u>	<u>Revenue Value (\$ millions)</u>
Processing services	69%	\$200
Software products	2	5
Professional services	3	10
Turnkey systems	3	10
Hardware (sales & rentals)	6	17
Tymnet	15	43
Other (maintenance)	<u>2</u>	<u>5</u>
	100%	\$290

- Approximately 60% (\$120 million) of Tymshare's processing services revenue was derived from remote computing and 40% (\$80 million) from batch services. A further breakdown of Tymshare's 1981 processing revenue is estimated as follows:

TYMSHARE PROCESSING SERVICES REVENUE

<u>Type</u>	<u>Percent of Processing Services Revenue</u>	<u>Revenue (\$ millions)</u>
General applications	21.5%	\$ 43
Credit card processing	12.5	25
Credit authorization	7.5	15
Accounting/tax services	22.5	45
Utilities	11.5	23
Medical	7.5	15
Government	7.0	14
Other industry specialty	<u>10.0</u>	<u>20</u>
	100.0%	\$200

- The Computer Services Group markets general and specialty timesharing and batch processing services, software, turnkey systems, and terminals.
- The largest division in the group is Information Network Services, with 1981 revenues estimated at \$110 million.

- Information Network Services sells general remote computing services and specialty processing targeted to industries such as utilities, manufacturing, telephone companies, and government agencies.
- Revenue losses from Fortune 1000 companies have affected division revenue during the current recession.
- Products that have done well include EXPRESS, FOCUS, and specialty applications for energy, utilities, and the federal government.
- A profile of applications available on Tymshare's network is presented in Exhibit B. Applications added to the network in the last year include:
 - FINSYSTEM, a personal financial planning tool and modeling system.
 - Universal Maintenance Information System (UMIS), used to schedule, track, and set priorities for all major categories of maintenance and repair.
 - LEVER, a tax-leveraged lease analysis system.
 - DWIGHTLINE, a petroleum data base.
- Information Network Services is responsible for marketing Tymshare's International Bank Information System (IBIS). IBIS operates on a DEC PDP-11, and monitors, evaluates, and controls the international activities of banks.
- Tymshare offers extensive accounting services to the telephone industry, including applications to measure installer productivity (TIPS), forecast workforce and funding requirements (TYMEBS), analyze business office operations (COMPAS), track cable inventory and use (PCIS), track construction problems (TYMTICKET), and control PBX maintenance.
- Tymshare's System XX is an on-site, dedicated system linked to the network and used for distributed processing functions. Based on a DEC 2020, System XX supports MAGNUM and other proprietary products. About five systems have been installed.
- A professional workstation, using microcomputers, is in development.
- Information Network Services Division also leases and sells a large number of terminals in support of the interactive service.

EXHIBIT B

APPLICATIONS AVAILABLE ON TYMSHARE'S RCS
NETWORK AND BATCH SERVICE BUREAUS

APPLICATION AREA/PRODUCT NAME	
<ul style="list-style-type: none"> • OPERATING ENVIRONMENT <ul style="list-style-type: none"> - IBM 370/3033, VM/CMS - AMDAHL V6, VM/CMS - XEROX 940s, TYMCOM IX - DEC SYSTEM 10, TYMCOM X • DISTRIBUTED PROCESSING CAPABILITIES <ul style="list-style-type: none"> - TYMSHARE MODEL 1100 INTELLIGENT TERMINAL - IBIS - TYMSHARE SYSTEM XX • PROGRAMMING LANGUAGES SUPPORTED <ul style="list-style-type: none"> - APL - COBOL - ASSEMBLY - FORTRAN - BASIC - PL/I • DATA MANAGEMENT SOFTWARE <ul style="list-style-type: none"> - FOCUS - RETRIEVE - IML - SYSTEM 1022 - MAGNUM - SYSTEM 2000 • DATA BASES AVAILABLE <ul style="list-style-type: none"> - TYMQUOTE SECURITIES DATA - CITIBASE TIME SERIES DATA BANK - SITE II DEMOGRAPHIC DATA (1980 CENSUS) - DWIGHTLINE (PETROLEUM) • FINANCIAL APPLICATIONS/TOOLS <ul style="list-style-type: none"> - BASIC BUSINESS LANGUAGE (BBL) - EXPRESS - FINPACK (FINANCIAL ANALYSIS) - TYMTAB (FINANCIAL MODELING) - FINSYSTEM (PERSONAL FINANCIAL PLANNING) • SCIENTIFIC AND ENGINEERING <ul style="list-style-type: none"> - GPSS - STRESS - MACE - ANVIL 4000 - MSINC - SPICE - NATIONAL SEMICONDUCTOR LIBRARY - TI MICROPROCESSOR SUPPORT 	

APPLICATION AREA/PRODUCT NAME	
<ul style="list-style-type: none"> • MANAGEMENT SERVICES <ul style="list-style-type: none"> - CASH MANAGEMENT - BUDGET PLANNING AND ANALYSIS - PERSONNEL (PERS) - PROJECT MANAGEMENT (CRAM) - EARNINGS RECORD (ERS) - RAIL FLEET MANAGEMENT (RAILTRACK) • ACCOUNTANTS/TAX SERVICES <ul style="list-style-type: none"> - GENERAL LEDGER (FRS) - TIME REPORTING AND BILLING (TRS) - DYNATAX, UNITAX, DELTATAX, AUTOTAX, ESTAX • BANKING APPLICATIONS <ul style="list-style-type: none"> - INTERNATIONAL BANK INFORMATION SYSTEM (IBIS) - CREDIT CARD PROCESSING - MUNICIPAL BONDS (BONDBID) - CREDIT ANALYSIS (SPREAD) - LOAN ACTIVITY TRACKING - FIXED ASSET ACCOUNTING - ASSET LIABILITY PLANNING (ALPS) - LEVERAGE LEASE ANALYSIS (LEVER) • OTHER INDUSTRY SPECIFIC APPLICATIONS <ul style="list-style-type: none"> - TELEPHONE INDUSTRY - CABLE TV ACCOUNTING - TRAVEL SERVICES - UTILITY LOAD ANALYSIS SYSTEM • OTHER KEY PRODUCTS <ul style="list-style-type: none"> - STATISTICAL SAMPLING - SURVEY - STATPAK - AUGMENT - DISSPLA - TELL-A-GRAF - EASY PLOT - ONTYME (ELECTRONIC MAIL) - UMIS (MAINTENANCE SCHEDULING) 	

- The Professional Services Division provides batch tax preparation services (DYNATAX), tax processing (UNITAX), and other services for accountants, as well as batch and remote batch processing for cable TV, banking, and manufacturing.
 - DYNATAX is offered nationally from 23 data centers. Over 500,000 returns were processed in the 1981/82 tax season, at an average cost of \$35 per return. Two features have been added to DYNATAX:
 - Accountants Return Control System (ARCS), which uses a desk top terminal to expedite input and the return of tax forms.
 - Accounting Data Entry System (ADES), which uses Tymshare's 1100 intelligent terminal for data entry functions in accountants' offices.
 - The UNITAX tax processing service is marketed in seven western states, with the largest concentration in Southern California.
 - In April 1982 Tymshare acquired the exclusive marketing rights to the accounting software developed by Timberline Systems, Inc.
 - The system, called On-Site Professional Accounting System (OPAS-I), is sold on a Texas Instruments 990 minicomputer.
 - Designed for public accounting professionals, OPAS-I includes modules for tax preparation, general ledger, trial balance, financial statements, payroll, accounts payable/receivable, and time and charges.
- Telecheck Services Inc. provides merchants in the U.S., Canada, and Hong Kong with guaranteed check acceptance services. Boosted by the acquisition of Applied Systems Corporation and two Telecheck franchises in 1981, Telecheck's revenue was about \$15 million last year. Revenue comes from franchises owned by Tymshare and royalty payments from other franchises. Annual revenue from all Telecheck franchises exceeds \$50 million.
 - Check guarantee and approval services are offered to retail merchants and other recipients of consumer checks.
 - Telecheck charges a percentage for each check inquiry and in return guarantees those funds to the merchant.
- Tymshare's Transaction Services Division currently contains Validata and digital authorization services. The two operations will generate

about \$6 million in revenue in 1982. Both are experiencing growth rates of 50% or more.

- Validata provides merchants, airlines, car rental firms, hotels, and restaurants with credit, travel, and expense card authorization services. A link to Telecredit adds the check authorization capability.
- Digital authorization services are provided by telephone terminals installed in retail stores and banks to verify credit cards and provide check guarantee services.
- Tymshare Banking Systems, based in Birmingham (AL), sells software to small- and medium-sized banks using Burroughs hardware. Application modules include demand deposit accounting, savings, and loans.
- Equipment Product Marketing is responsible for marketing Scanset, a low-cost terminal for professionals and home information use. Manufactured by Matra, a French manufacturer of telecommunications equipment, Tymshare sells two models priced at \$495 and \$649 each.
- The Network Systems Group provides communications services through two subsidiaries, Tymnet Inc. and Microband Corporation of America, and markets travel and pay-by-phone services through its Integrated Systems Division.
- Tymnet, a private packet-switched data communications network, currently serves 270 U.S. cities and 34 foreign countries through 900 switching centers.
 - Tymnet's 1981 revenue from unaffiliated companies was \$42.5 million, up 74% over 1980 revenue of \$24.4 million.
 - 1981 growth rates for Tymnet are expected to be over 60%.
 - Tymnet also designs and installs custom networks for large clients using Tymshare-manufactured network processors. Clients include TRW, Philips, Intel, Cable and Wireless, Swedish PTT, and British Petroleum.
- Microband Corporation of America distributes pay TV programming to local markets using microwave technology. In February 1982 Microband filed a petition with the Federal Communications Commission to grant construction of wireless cable systems in major urban markets using microwave transmission rather than coaxial cable. If approved, these systems, called URBANET, would deliver a wide range of premium television programming (pay TV), as well as information and transactional services, directly to urban homes and small businesses. Possible services URBANET could provide include:
 - Teleshopping.
 - Security systems.

- Energy management.
 - Home banking.
 - Pay-per-view home events.
 - Teletext or videotex services.
- The Integrated Systems Division provides accounting and reservation services to travel agents and tour operators and markets pay-by-phone services.
 - Processing services provided by Travel Management Services include:
 - MARPLUS, an airline reservation system.
 - PARSII, a dial-up multiaccess reservation system.
 - FIRST, the Fully Integrated Reservation System for Travel.
 - Travel System 2000 is a desktop computer system for travel agents. Sold on a Texas Instruments DS990 Model I, TS 2000 can operate as a standalone system or with the network.
 - The system is designed for travel agents with up to \$750,000 in ticketing volume per month.
 - It prepares airline tickets, invoices, itineraries, general ledger and daily scheme reports, and profit-and-loss statements.
 - A nationwide telephone bill payment and funds transfer service called Pay-Tym is marketed by Integrated Services.
- The Computer Technology Group develops new software systems and products, provides third-party hardware maintenance services, and markets certain technical products.
 - The Office Automation Division is responsible for network-related office products.
 - The primary product is AUGMENT, an on-line automation system making available office files, notes, and reports through remote terminals. A spelling dictionary, graphics capability, and electronic mail are available.
 - AUGMENT is designed for sophisticated users requiring large textual processing services. Most systems have been installed in government agencies.

TYMSHARE, INC.

- The System Technology Division markets the DYNASTY system.
 - DYNASTY, introduced in 1982, will be sold to OEMs and turnkey system houses for development and application processing. DYNASTY prices, using DEC hardware, start at \$19,900 without software. A full line of UNIX-based software, including word processing and an office support system, a relational data base management system, and other software, is available. Five systems are marketed:
 - DYNASTY 1 and DYNASTY 2 are two- and four-user systems with dual floppy disks.
 - DYNASTY System 10X and System 35X are desktop application processors with floppy disk drives and communication ports.
 - DYNASTY 60X has a larger memory, more communication ports, and a tape system for data load and backup functions.
- The Computer Management Services Division is responsible for data center operations, internal maintenance, and third-party maintenance services.
- The International Group manages remote computing services offered in England, France, Japan, and West Germany. Joint ventures have been established to market Tymshare's services in each foreign country.

INDUSTRY MARKETS

- Tymshare's 1981 computer services industry markets are estimated as follows:

Banking and finance	25%
Services and other	25
Manufacturing	20
Utilities	10
Government	9
Medical	7
Distribution	<u>4</u>
	100%

- 1982 revenue in the banking and medical industries will be considerably lower due to the sale of two major business units.

GEOGRAPHIC MARKETS

- Approximately 96% of Tymshare's revenue is derived from geographic locations throughout the U.S. International sources account for about 4% of revenue, most of which is remote processing.

COMPUTER HARDWARE AND SOFTWARE

- Tymshare maintains remote computing centers in Cupertino, Dallas, and Valley Forge (PA). Computer equipment used for the network service consists of:
 - 11 IBM 370/158s, VM/CMS.
 - 4 IBM 3033s, VM/CMS.
 - 1 Amdahl V/6, VM/CMS.
 - 24 DEC System/10s, Tymcom X.
 - 20 Xerox 940s, Tymcom IX.
- Other Tymshare service bureaus provide batch and remote computing services in support of tax processing, cable TV, and accounting services. The centers, using a variety of IBM and Burroughs equipment, are located in:
 - Alabama (Birmingham).
 - California (San Francisco and Los Angeles).
 - Colorado (Denver).
 - Florida (Miami and Tampa).
 - Georgia (Norcross).
 - Illinois (Skokie).
 - Kansas (Wichita).
 - Kentucky (Lexington).
 - Massachusetts (Salem and West Springfield).
 - Michigan (Detroit).
 - Minnesota (Bloomington).
 - Missouri (St. Louis).
 - New York (Syracuse).
 - North Carolina (Gastonia).
 - Oregon (Portland).
 - Pennsylvania (Blue Bell).
 - Tennessee (Nashville).
 - Texas (Houston).
 - Virginia (Springfield).
 - Wisconsin (Madison).

COMPANY PROFILE

TYMSHARE, INC.
20705 Valley Green Drive
Cupertino, CA 95014
(408) 446-6000

Thomas J. O'Rourke,
Chairman and President
Public Corporation, NYSE
Employees: 3,600
Total Revenue, Fiscal Year End
12/31/80: \$235,854,000

THE COMPANY

- Since its founding in 1966, Tymshare has evolved from a remote computing services company specializing in scientific and engineering applications into a multiservice vendor. In addition to providing processing services, Tymshare sells data communications services, markets turnkey systems and software products, and provides consulting and third-party maintenance services.
- Tymshare's 1980 revenue was \$235.9 million, a gain of 22% over 1979 revenue of \$193.1 million. Pre-tax income increased 32% and net income increased 28%. Earnings per share, after a two for one stock split, rose 18% over the 1979 level. A five-year financial summary follows.

TYMSHARE, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

FISCAL YEAR ITEM	1980	1979	1978	1977	1976
Revenue	\$235,854	\$193,092	\$149,559	\$101,174	\$81,837
• Percent increase from previous year	22%	29%	48%	24%	27%
Income before taxes	34,393	26,064	19,394	15,808	13,163
• Percent increase from previous year	32%	34%	23%	20%	34%
Net income	18,743	14,644	10,594	8,008	6,713
• Percent increase from previous year	28%	38%	32%	19%	32%
Earnings per share	1.81	1.53	1.15	0.91	0.77
• Percent increase from previous year*	18%	33%	26%	18%	26%

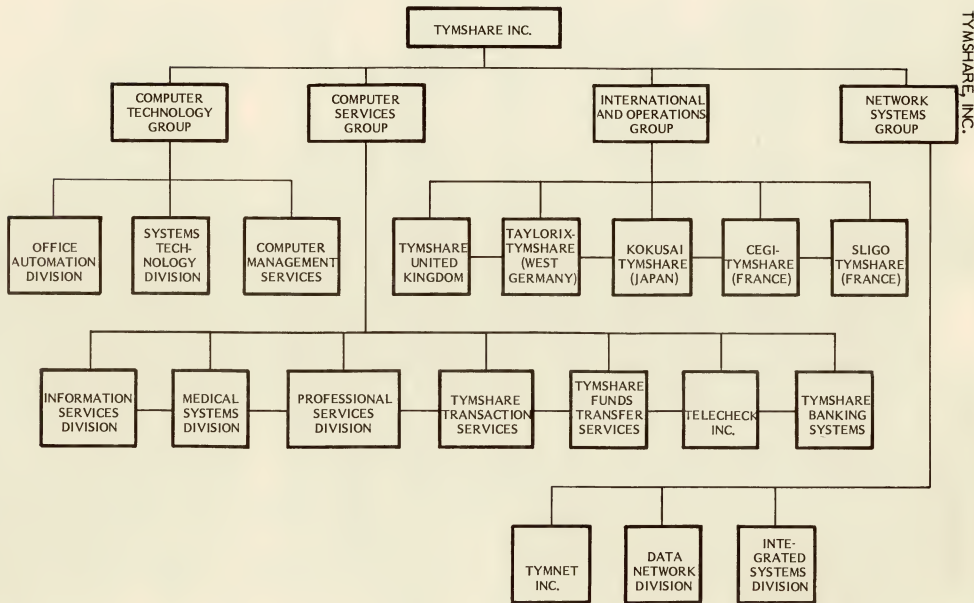
*Reflects two for one stock split in December 1980

TYMSHARE, INC.

- For the six months ending June 30, 1981, Tymshare reported revenue of \$153,770,000, an increase of 25% over 1980. Pretax income increased 20% to \$24,022,000. Net income increased 23% to \$13,302,000. Per share income increased only 5% to \$1.13 due to stock dilution.
- Tymshare made two public stock offerings in 1980 yielding \$46.3 million. Proceeds were used primarily to retire debt. Tymshare currently has a \$150 million line of unsecured credit available for investment or acquisition.
- Tymshare has completed, or is in the process of completing, several acquisitions. Expenditures for the following 1980 transactions totalled \$803,000 in cash, 6,190 shares of common stock (approximately \$200,000), and \$4,470,000 in cash payable in 1981.
 - In April 1980, Tymshare acquired Medistat, Inc., a wholly owned subsidiary of United of Wisconsin. Medistat provides shared financial processing services to hospitals in the Midwest and has annual revenue of about \$4 million. The acquisition expands Tymshare's geographic coverage for hospital services and complements two previous acquisitions: Medical Data Systems, which serves hospitals in mid-Atlantic and eastern states, and Medical Information, Inc., which serves the southern region.
 - In October 1980, Tymshare acquired the Bankcard Association of Rhode Island (BARI) as a move in establishing a nationwide bankcard service. BARI processes VISA and Master Charge transactions from merchants and financial institutions in southeastern New England. Its annualized revenue is approximately \$2 million.
 - In November 1980, the acquisition of Denver-based Telecheck Services, Inc., was completed through a cash purchase of all Telecheck stock. Telecheck provides merchants in the U.S., Canada, and Hong Kong with a guaranteed check acceptance program. 1980 Telecheck revenue was approximately \$3 million, including royalties paid by 30 franchised operations not purchased by Tymshare.
 - Tymshare announced in June 1981 the acquisition of Telecheck franchises in Philadelphia and Washington, DC, through a tax-free exchange of stock.
 - In January 1981, Tymshare completed the acquisition of Microband Corporation of America. Microband owns and operates common-carrier, omni-directional microwave transmission stations in 75 major U.S. metropolitan areas under Multipoint Distribution Service licenses granted by the FCC. Its primary business is transmitting PAY TV signals. Microband's current annualized revenue is approximately \$3 million.
 - Negotiations to acquire Capital Credit Corporation, a subsidiary of Union Corporation, were terminated in January 1981.

- less than 1M*
- Also in January 1981, Tymshare announced the acquisition of Lewiston, ME, based Payment and Transfer Services, Inc. (PTS). PTS provides electronic funds transfer bill-paying services, allowing customers to pay recurring monthly bills automatically after verification of adequate funds at the user's financial institution.
 - In June 1981, Tymshare acquired Bethesda-based Applied Systems Corporation via an exchange of stock. Applied Systems is the largest supplier of data processing services to Telecheck's franchisees. It also develops point-of-sale terminals for retail merchants.
 - In July 1981, Tymshare signed a letter of intent to acquire ITT Electronic Travel Services, Inc. (ETS) from International Telephone and Telegraph Corporation. ETS had 1980 revenue of approximately \$6 million. Its primary service, MARSPLUS, provides airline reservation systems access to over 700 travel agents in the U.S. ETS will operate as part of Tymshare's Integrated Systems Division.
 - Tymshare announced an agreement to explore commercial opportunities with Intelmatique, the marketing arm for the Telematique program of the French Postal Telegraph and Telephone agency.
 - Telematique markets such products as Teletel (interactive videotext or viewdata system), Electronic Directory (computerized telephone directory system), and Smart Card (credit card embedded with a microprocessor).
 - Tymshare agreed to purchase 100,000 desktop intelligent terminals from Matra, a French telecommunications equipment manufacturer. Priced at \$500-700 apiece, the terminals will be marketed in conjunction with Tymshare services requiring individual data entry.
 - Tymshare is organized into four groups and eighteen operating units, as shown in Exhibit A.
 - Tymshare reports revenue in two segments, Computer Information Services and Data Communications Services (Tymnet). A three-year summary follows:

EXHIBIT A
TYMSHARE ORGANIZATION



TYMSHARE, INC.

TYMSHARE REVENUE BY
SERVICE TYPE
(\$ millions)

	Computer Information Services	Data Communications Services
1980		
• Revenue	\$ 211.0	\$ 24.4
• Intersegment Revenue	7.5	10.5
• Operating profit	35.9	4.8
1979		
• Revenue	176.2	16.2
• Intersegment Revenue	6.5	7.8
• Operating profit	29.1	3.1
1978		
• Revenue	138.5	10.4
• Intersegment Revenue	6.0	6.0
• Operating profit	21.9	1.3

- Major competitors of Tymshare's services are:
 - Remote Computing: GEISCO (General Electric), Service Bureau Company (CDC), National CSS (Dun & Bradstreet), Automatic Data Processing, and Computer Sciences.
 - Credit Card Processing and Authorization Services: First Data Resources, National Data Corporation, and independent bank associations.
 - Medical Services: MCAUTO's Health Services Division, Shared Medical Systems, and HBO & Company.
 - Accounting/Tax Services: CCH Computax, Comshare, Fastax, Computer Sciences, and Reynolds and Reynolds.
 - Data Communication Services: GTE Telenet and AT&T.

KEY PRODUCTS AND SERVICES

- Tymshare's 1980 revenue by type of service is estimated as follows:

TYMSHARE
REVENUE SOURCES

Service Type	Percent of Total	Revenue Value (\$ millions)
Processing services	70%	\$166
Software products	2	5
Professional services	2	5
Turnkey systems	2	5
Hardware	5	12
Other (Tymnet, maintenance, rentals)	14	33
International	<u>4</u>	<u>10</u>
	100%	\$236

- Approximately 55% (\$90 million) of Tymshare's processing services revenue was derived from interactive computing, 43% (\$71 million) from batch services, and 2% (\$5 million) from facilities management. A further breakdown of Tymshare's 1980 processing revenue is estimated as follows:

TYMSHARE
PROCESSING SERVICES REVENUE

Type	Percent of Processing Services Revenue	Revenue Value (\$ millions)
General applications	26%	\$ 43
Credit card processing	18	30
Accounting/tax services	18	30
Utilities	12	20
Medical	8	13
Government	7	12
Other industry specialty	<u>11</u>	<u>18</u>
	100%	\$166

- The Computer Services Group markets general and specialty timesharing, batch services, software, turnkey products, and terminals to select application areas.
- The Information Services Division provides the core interactive processing services to Tymshare clients. Specialty products have been developed or acquired for targeted industry segments including financial, utility, manufacturing, telephone company, accountant, and government.
- A profile of applications available is presented in Exhibit B.

EXHIBIT B

APPLICATIONS AVAILABLE ON TYMSHARE'S RCS
NETWORK AND BATCH SERVICE BUREAUS

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> • OPERATING ENVIRONMENT <ul style="list-style-type: none"> – IBM 370/3033, VM/CMS – AMDAHL V6, VM/CMS – XEROX 940s, TYMCOM IX – DEC SYSTEM 10, TYMCOM X • DISTRIBUTED PROCESSING CAPABILITIES <ul style="list-style-type: none"> – TYMSHARE MODEL 1100 INTELLIGENT TERMINAL – TYMCARE – MANUFACTS – IBIS – TYMSHARE SYSTEM XX • PROGRAMMING LANGUAGES SUPPORTED <ul style="list-style-type: none"> – APL – COBOL – ASSEMBLY – FORTRAN – BASIC – PL/1 • DATA MANAGEMENT SOFTWARE <ul style="list-style-type: none"> – FOCUS – RETRIEVE – IML – SYSTEM 1022 – MAGNUM – SYSTEM 2000 • DATA BASES AVAILABLE <ul style="list-style-type: none"> – TYMQUOTE SECURITIES DATA – CITIBASE TIME SERIES DATA BANK – SITE II DEMOGRAPHIC DATA (1980 CENSUS) • FINANCIAL APPLICATIONS/TOOLS <ul style="list-style-type: none"> – BASIC BUSINESS LANGUAGE (BBL) – EXPRESS – FINPACK (FINANCIAL ANALYSIS) – TYMTAB (FINANCIAL MODELING) • SCIENTIFIC AND ENGINEERING <ul style="list-style-type: none"> – GPSS – STRESS – MACE – TI MICROPROCES- – MSINC SOR SUPPORT – NATIONAL SEMICONDUCTOR LIBRARY – SPICE – ANVIL 4000 	<ul style="list-style-type: none"> • MANAGEMENT SERVICES <ul style="list-style-type: none"> – CASH MANAGEMENT – BUDGET PLANNING AND ANALYSIS – PERSONNEL (PERS) – PROJECT MANAGEMENT (GRAM) – EARNINGS RECORD (ERS) – RAIL FLEET MANAGEMENT (RAILTRACK) • ACCOUNTANTS/TAX SERVICES <ul style="list-style-type: none"> – GENERAL LEDGER (FRS) – TIME REPORTING AND BILLING (TRS) – DYNATAX, UNITAX, DELTATAX, AUTOTAX, ESTAX • BANKING APPLICATIONS <ul style="list-style-type: none"> – INTERNATIONAL BANK INFORMATION SYSTEM (IBIS) – CREDIT CARD PROCESSING – MUNICIPAL BONDS (BONDBID) – CREDIT ANALYSIS (SPREAD) – LOAN ACTIVITY TRACKING – FIXED ASSET ACCOUNTING – ASSET LIABILITY MANAGEMENT • OTHER INDUSTRY SPECIFIC APPLICATIONS <ul style="list-style-type: none"> – TELEPHONE INDUSTRY – CABLE TV ACCOUNTING – MANUFACTURING (MANUFACTS) – FUEL OIL INDUSTRY – TRAVEL SERVICES – MEDICAL SERVICES – UTILITY LOAD ANALYSIS SYSTEM (LAMP) • OTHER KEY PRODUCTS <ul style="list-style-type: none"> – STATISTICAL SAMPLING – SURVEY – STATPAK – AUGMENT – DISSPLAA – TELL-A-GRAF – EASY PLOT

- Tymshare introduced Tymshare System XX, an onsite dedicated processor for distributed applications, in March 1981. Based on a DEC 2020, System XX will be the foundation for existing and future turnkey offerings. System XX will support MAGNUM and other proprietary Tymshare products.
- Tymshare's manufacturing information system (MANUFACTS) supports the manufacturing, accounting, and marketing areas of small- and medium sized companies.
 - Applications include sales order entry and invoicing, inventory control, purchase order accounting, bill of materials, work order, material requirements planning, accounts payable, accounts receivable, general ledger, and financial reporting.
 - MANUFACTS is marketed to small- and medium-sized companies and divisions of large corporations.
 - MANUFACTS is available as a turnkey system on the DEC 2020-based Tymshare System XX.
- Tymshare's International Bank Information System (IBIS) monitors, evaluates, and controls the international activities of banks.
 - Application modules include foreign exchange, commercial loan, demand deposit, general ledger, money market, and customer information file.
 - IBIS is also available as a turnkey system on a DEC PDP-11 minicomputer.
- Tymshare offers extensive accounting services to the telephone industry, including applications to measure installer productivity (TIPS), forecast workforce and funding requirements (TYMEBS), analyze business office operations (COMPAS), track cable inventory and use (PCIS), track construction problems (TYMTICKET), and control PBX maintenance.
- Tymshare announced Railtrack in July 1981, a railroad boxcar tracking system. Railtrack provides scheduling, routing, and accounting for corporations having their own boxcars for goods transport.
- The Information Service Division leases and sells a large number of terminals in support of the interactive service.

- The Information Services Division includes all professional services available from Tymshare in the form of custom application development to be placed on the timesharing service.
- The Medical Systems Division was begun in 1976 with the acquisition of Medical Data Systems. Two additional acquisitions have enlarged the client base. Medical Systems provides primarily batch processing to about 150 hospitals and health care institutions from data centers in Mahwah (NJ), Dallas, and Milwaukee.
 - Hospitals install Four Phase IV 40, 70, or 90 terminals internally to connect with the Tymshare data center. Applications available include accounts payable, accounts receivable, general ledger, inventory control, and patient records.
 - Clients are concentrated in the Northeast, Midwest, South, and the Far West.
 - For hospitals requiring internal data capture and reporting, Tymshare offers TYMCARE. Applications include admissions, nurse station order entry and communications, laboratory, pharmacy, radiology, housekeeping, dietary, accounting, and administrative tools.
 - TYMCARE is available as a turnkey system on the Tymshare System XX. It can operate independently or in conjunction with the accounting functions available on the processing service.
- The Professional Services Division provides batch tax preparation (DYNATAX), tax processing (UNITAX), and other services for accountants, as well as batch and remote batch processing for fuel oil, cable TV, banking, manufacturing, and accounting companies. Geographic and revenue growth has been through both acquisition and internal expansion.
 - DYNATAX is offered nationally from 23 data centers. Local data entry and editing can be done on the Model 1100 terminal. Approximately 100 systems will be in use for the 1981 tax season.
 - UNITAX tax processing service is marketed in seven western states, with the largest concentration in Southern California.
- Tymshare Transaction Services (TTS) was begun in 1977 with the acquisition of Western States Bankcard Association. TTS provides batch sales draft processing, interactive credit card authorization, batch card holder accounting, credit evaluation and scoring, statement printing, merchant accounting, card embossing, and custom reporting for 300 VISA and MasterCard financial institutions in 13 western states.

- The acquisition of Bankcard Association of Rhode Island expands TTS's presence to the eastern bank and savings and loan market.
- TTS's 1979 revenue was \$33 million, a 32% increase over 1978. 1980 revenue growth was significantly slower due to decreased credit card usage from tighter government monetary controls.
- TTS added pay-by-phone services in 1981 with the acquisition of Payment and Transfer Services. Such services are already available internally from Chase Manhattan and are planned from Bank of America and Security Pacific.
- Credit, travel, and expense card authorization services are provided through TTS and Validata to merchants, airlines, car rental firms, hotels, and restaurants.
- TTS offers the T3 telephone terminal to retailers and banks for electronic credit card and check guarantee. The terminal reads a credit card stripe or check code and queries the appropriate data base. VISA, MasterCard, American Express, Diners Club, and Carte Blanche are accepted.
- A more sophisticated terminal T-CAT will be introduced in 1981 to upgrade the T3 offering.
- Tymshare Funds Transfer Services (TFTS) provides electronic funds transfer through OPTION, an automated teller machine network shared among financial institutions.
 - Terminals are installed in such central locations as shopping centers and airports.
 - The first installation was in 1980 in the San Fernando Valley (Los Angeles) with 12 machines shared by 19 participating institutions. A second string of 15 machines is planned for Orange County in 1981.
 - Participants pay an initial subscription fee in addition to transaction charges.
- Telecheck, Inc., provides check guarantee and approval services to retail merchants and other recipients of consumer checks.
 - Telecheck charges a percentage of each check and in return guarantees those funds to the merchant.
- Tymshare Banking Systems, based in Huntsville, AL, provides packaged software to small- and medium-sized banks using Burroughs mainframes.

- TTS, Tymshare Funds Transfer Services, and Telecheck were moved from the Network Services Group to the Computer Services Group in 1981 to combine and consolidate financial services offerings.
- The Network Systems Group provides packaged and custom network services, related hardware, and some processing services.
 - Tymnet began in 1970 as the private packet-switched network for Tymshare's processing services. In 1977, Tymnet received FCC approval as a common carrier for data communications. Tymnet now serves 250 U.S. cities and 32 foreign countries through 550 switching centers.
 - Tymnet's 1980 revenue from unaffiliated clients was \$24.4 million, up 51% from 1979. Revenue from processing services clients was \$10.5 million. Operating profit increased 53% to \$4.8 million. Total Tymnet revenue increased \$11 million (46%) over 1979.
 - A new version of Tymnet's electronic mail service, OnTyme II, was introduced in March 1980. It allows users to create messages on most commercially available terminals and send them to facsimile terminals. Cost per connect hour ranges from \$7.50 to \$8.00.
 - In May 1980, Tymnet announced a joint venture with M/A-COM and Satellite Business Systems to supply local data communications service in conjunction with SBS's intercity satellite service. Demonstration projects will operate in New York and San Francisco beginning in 1981.
 - Tymnet will use microwave and radio transmission to connect the user with the high-speed network. Direct wideband communication will bypass the slow voice-quality phone lines.
 - The acquisition of Microband Corporation with a base of 60 microwave transmitters will provide the technical base to develop this system.
 - The Data Network Division began in 1979 to design and install custom networks for large clients using the Tymshare-manufactured network processors. Clients include TRW, Philips, Intel, Cable and Wireless, and Swedish PTT.
 - The Integrated Systems Division (ISD) works with travel agents, tour operators, and airlines to provide communications access to reservations systems. Some accounting and ticketing services are also available.

TYMSHARE, INC.

- ISD was moved to the Network Services Group in 1981 to consolidate communications-related divisions.
 - ISD also has a group tracking development in the home processing services market.
- The Computer Technology Group develops new software systems and products, provides hardware maintenance, and markets certain technical products.
 - The Office Automation Division is responsible for network-related office products.
 - The primary product is AUGMENT, an on-line automation system making available office files, notes, and reports through remote terminals. A spelling dictionary, graphics capability, and electronic mail are available.
 - AUGMENT is marketed primarily to government clients.
 - The Systems Technology Division is a research and development group responsible for operating systems, languages, and utilities.
 - The Computer Management Services Division is responsible for data center operation, maintenance, and third-party service.
- The International Group operates remote computing services in England, France, Japan, and West Germany. Joint ventures are operated in each foreign country.
 - In 1980 Tymshare established a communications consulting subsidiary in Paris called Tymshare Network Systems Consulting S.A. to provide maintenance training to such organizations as European Postal Telephone and Telegraph administrations and international record carriers.

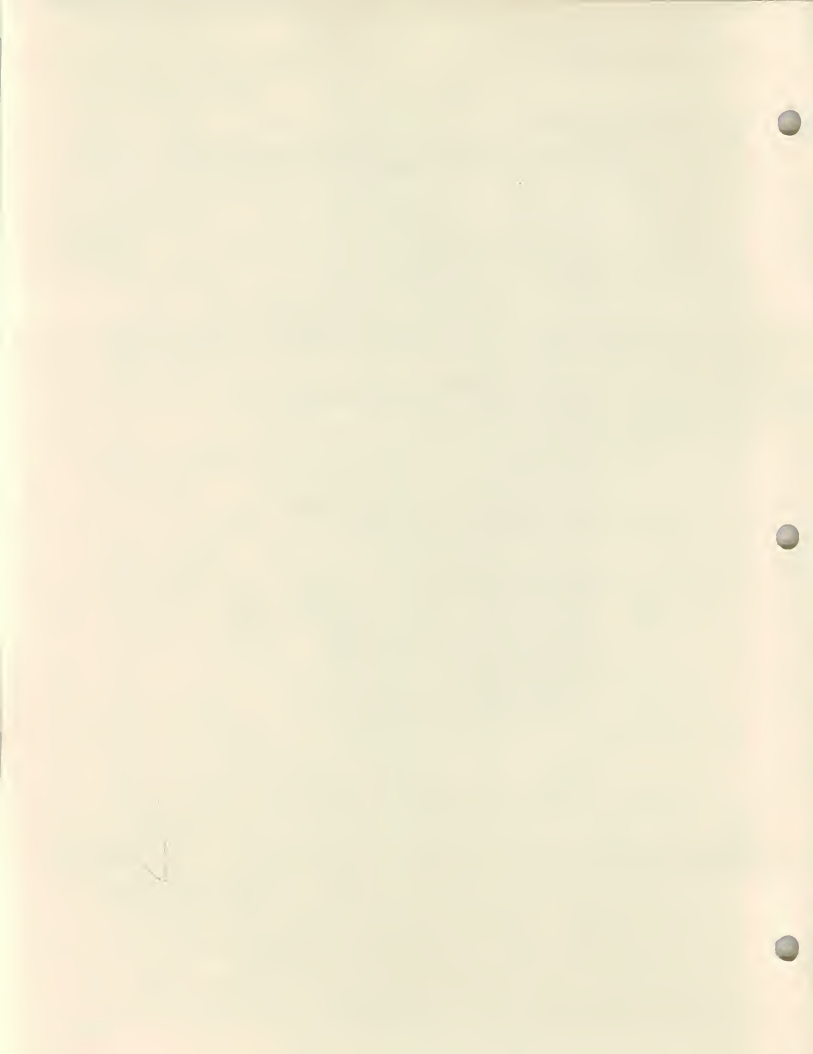
INDUSTRY MARKETS Tymshare's computer services industry markets are estimated as follows:

- Banking and finance	25%
- Services	24
- Manufacturing	20
- Utilities	10
- Government	9
- Medical	8
- Distribution	<u>4</u>
	100%

GEOGRAPHIC MARKETS Approximately 96% of Tymshare's revenue is derived from geographic locations throughout the U.S. International sources account for 4%, primarily from Europe and Japan.

COMPUTER HARDWARE

- Tymshare maintains remote computing centers in Cupertino, Dallas, and Valley Forge (PA). Computer equipment used for the network service consists of:
 - Eight IBM 370/158s, VM/CMS.
 - Three IBM 3033s, VM/CMS.
 - One Amdahl V6, VM/CMS.
 - Seventeen DEC System/10s, Tymcom X.
 - Twenty-one Xerox 940s, Tymcom IX.
- Tymshare's batch service bureaus provide applications services in support of tax processing, fuel oil, cable TV, accounting services, and medical services. The centers, using a variety of IBM and Burroughs equipment, are located in:
 - Alabama (Birmingham).
 - California (San Francisco and Los Angeles).
 - Colorado (Denver).
 - Florida (Miami and Tampa).
 - Georgia (Norcross).
 - Illinois (Skokie).
 - Kansas (Wichita).
 - Kentucky (Lexington).
 - Massachusetts (Salem and West Springfield).
 - Michigan (Detroit).
 - Minnesota (Bloomington).
 - Missouri (St. Louis).
 - New Jersey (Mahwah).
 - New York (Syracuse).
 - North Carolina (Gastonia).
 - Oregon (Portland).
 - Pennsylvania (Blue Bell).
 - Tennessee (Nashville).
 - Texas (Houston).
 - Virginia (Springfield).
 - Wisconsin (Madison and Milwaukee).



July 9, 1982

MEMO: NOTES FROM ADAPSO MEETING IN NEW YORK - 6/17/82

FROM: PAC

CC: Company File - Tymshare

The new Financial person at Tymshare gave the presentation to the analysts at the ADAPSO Conference. The presentation was notable for the fact that it discussed Tymshare's problems and then presented data from IDC on the growth of the marketplace, and talked about a few of the areas that Tymshare was expanding in.

Tymshare has grown about 29% per year over the last 5 years. Growth rate for 1980-1981 was 23%.

In terms of the overall fiscal performance of last year, Vince pointed out that in May 1981, AT&T had a 35% price increase. Tymshare calculated this had a \$9 million impact on their 1981 pre-tax profit. They felt this price increase was unexpected and it took them a year to pass the increases to their timesharing customers. Their communications costs went from 9½% to 13% as a result of this price increase. Tymnet was able to adjust and passits prices through to the consumer immediately. Tymshare was not able to do this because of fixed price contracts.

The remote computing services is being affected now. They are finding that people are buying less services and also there is more bringing of services in-house.

In 1980, information services business grew at 26%. Their forecast for 1981 was 20%. In the first quarter, it was 23%. By the time the second quarter was finished, it was cumulatively 18%, by the end of the third quarter, it was cumulatively 15%, and by the end of the fourth quarter it was cumulatively 12%. This had a \$7½ million impact on Tymshare as a whole because they had put the costs in place.

He commented that many of the forecasts had been generated by regional managers who are not now with the company. The implication was that Tymshare had gotten rid of alot of these people.

The credit card precessing was the third area of softness. In 1980 it produced a \$5½ million profit. In 1981, it was a breakeven. They are moving to POS systems with credit card processing using a GTE terminal. They are starting an authorization system which will avoid the \$50 floor limit. So far, voice authorization costs about 75¢ per inquiry. Tymnet, with a new POS terminal, will cost about 12¢ per inquiry.

They have divested some of their business including selling a medical business to MCAUTO. They have also closed down their shared ATM project. The benefits



Tymshare

Page 2

and sales of these products would have been 5¢ per share but the result is 0 because they are charging other things against it.

They are getting into some new areas which have a new impact next year. They are obviously interested in software products.

In the finance and banking area, they are looking at protocol interchange systems for example, allowing TWA to interface with the travel agents in another industry area.

In terms of new directions, they are going from a complex composite applications. For example, they have a contract with the Army Corp of Engineers for a worldwide infantry management system. They are finding that local communications costs are creating an interest in satellite and cable. They are in a number of experiments.

They expect of the order of 55% growth in Tymnet this year. It should be noted that they did not say what impact the AT&T price increase which they passed on directly to their consumers had as a part of their overall Tymnet revenue increase last year.

INPUT



1980 Revenues
T/S (Res) \$91 M (Info. Serv. Div.)
TTS - Rent above \$10 M
in contracts to First Data

1980
Revenues 235,854,000
IST 339 M
Net 34.4
Per share 18.7
Per share 1.81

Paula Lawrence

COMPANY HIGHLIGHT

TYMSHARE, INC.
20705 Valley Green Drive
Cupertino, CA 95014
(418) 446-6000

Thomas J. O'Rourke,
Chairman and President
Public Corporation, NYSE
Employees: 3,500
Total Revenues, Fiscal Year End
12/31/79: \$193,092,000

THE COMPANY

- Since its founding in 1966, Tymshare has evolved from a remote computing services company specializing in scientific and engineering applications into a multiservices vendor. In addition to providing processing services, Tymshare sells data communications services, markets turnkey systems and software products, and provides consulting and third-party maintenance services.
- Tymshare's 1979 revenues were \$193.1 million, a gain of 29% over 1978's revenues of \$149.6 million. Pre-tax income, net income and earnings per share increased more than 30% over the previous year. A five-year financial summary follows:

TYMSHARE, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ Thousands, Except Per Share Data)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
Revenues	\$193,092	\$149,559	\$101,174	\$81,837	\$64,412
• Percent increase from previous year	29%	48%	24%	27%	22%
Income before taxes and extraordinary item	\$26,064	\$19,394	\$15,808	\$13,163	\$ 9,858
• Percent increase from previous year	34%	23%	20%	34%	47%
Net income	\$14,644	\$10,594	\$ 8,008	\$ 6,713	\$5,094(A)
• Percent change from previous year	38%	32%	19%	32%	40%
Earnings per share	\$ 3.06	\$ 2.31	\$ 1.82	\$ 1.55	\$ 1.22
• Percent increase from previous year	32%	27%	17%	27%	34%

(A) Extraordinary item reported

1 of 10
October 1980

COMPANY HIGHLIGHT/TYMSHARE, INC.

- Of Tymshare's 29% growth in revenues in 1979, approximately \$38 million (25%) came from continued growth of its information services and Tymnet services organizations. Four percent, or \$5.5 million, resulted from acquisitions made by the company in mid-1978 and 1979.
- For nine months ending September 30, 1980, Tymshare reported revenues of \$177.1 million. INPUT estimates Tymshare's 1980 revenues will be in the \$235-245 million range.
- Tymshare has completed, or is in the process of completing, several acquisitions.
 - In October 1979, Tymshare acquired the System III small business computer lease and maintenance business from Lockheed Electronics Company's Computer Systems Division.
 - Medistat, Inc., a wholly owned subsidiary of Blue Cross/Blue Shield United of Wisconsin, was acquired in April 1980. Medistat provides shared financial processing services to hospitals in the Midwest and has annual revenues of about \$4 million. The acquisition expands Tymshare's geographic area for hospital services and complements two previous acquisitions: Medical Data Systems, which serves hospitals in mid-atlantic and eastern states, and Medical Information Inc., which serves the southern region.
 - In July 1980, Tymshare announced that an agreement in principal was signed to acquire all of the stock of Telecheck Services Inc. of Denver. Telecheck provides merchants in the U.S., Canada and Hong Kong with a guaranteed check acceptance program. Terms of the acquisition and Telecheck's revenues were not disclosed.
 - In August 1980, a contract was signed to acquire Microband Corporation of America. Microband owns and operates common-carrier, omni-directional microwave transmission stations in numerous major U.S. metropolitan areas under Multipoint Distribution Service licenses granted by the FCC. Its primary business is transmitting PAY TV signals. Microband's current annualized revenues are approximately \$3 million. The acquisition is subject to the approval of the Federal Communications Commission.
 - In October 1980, Tymshare acquired the Bankcard Association of Rhode Island (BARI) as a key move in establishing a nationwide bankcard service capability. BARI processes VISA and Master Charge transactions from merchants and financial institutions in southeastern New England. Its annualized revenues are approximately \$2 million. Terms of the acquisition were not disclosed.
 - A letter of intent was signed in late October 1980 to acquire the Capital Credit Corp., a subsidiary of Union Corporation. Capital Credit, headquartered in Washington (DC), provides nationwide collec-

COMPANY HIGHLIGHT/TYMSHARE, INC.

tion services from 17 branch offices. Collection services are provided to 5,000 credit grantors in the banking, airline, hotel, retail and automotive industries. Capital Credit had revenues of \$8 million at FYE June 30, 1980. If the acquisition is completed, Capital Credit will operate as part of Tymshare Transaction Services. Terms of the acquisition were not disclosed.

- Tymshare is organized into four operating groups: Computer Services, Financial and Network Systems, Technical Services and International Operations.
 - The Computer Services Group provides general timesharing and batch services through three operational areas:
 - Tymshare Medical Systems, which provides computer services to hospitals and the health care industry.
 - Information Services, which provides timesharing to companies in manufacturing, accounting, utilities, banking and finance, and government.
 - Professional Services, which provides batch, remote batch and on-line processing for tax returns, fuel oil, cable TV, banking, manufacturing, general ledger and custom applications.
 - The Financial and Network Systems Group consists of:
 - Tymshare Transaction Services, Inc., which provides a full range of data processing services for Master Charge and VISA accounts.
 - Tymnet, Inc., an FCC-chartered common carrier licensed to provide data communication services.
 - Data Network Division, which manufactures minicomputers used in network services and markets dedicated network services using Tymnet technology and minicomputers.
 - EFT/Validata Division, which provides electronic funds transfer and credit authorization services.
 - The Technical Services Group develops new software systems and products, provides hardware equipment support and markets certain technical products to industry and government. It has three components:
 - Tymshare Travel Management Services provides accounting and reservation services to travel agents and tour operators.
 - Equipment Support Division provides third-party maintenance and refurbishing of computer equipment.

COMPANY HIGHLIGHT/TYMSHARE, INC.

- Office Information markets Augment, an integrated office automation system.
- The International Operations Group manages the remote computing services offered through Tymshare Canada and affiliated companies in England, West Germany, France and Japan.
- Tymshare is currently emphasizing the development of new technology and services in data communications. In addition, Tymshare will continue to develop applications-oriented services for specific industries: banking and finance, manufacturing, utilities, accounting, government and health care.
- Major competitors of Tymshare's services are:
 - Remote Computing: GEISCO (General Electric), Service Bureau Company (CDC), National CSS, Automatic Data Processing and Computer Sciences.
 - Credit Card Processing/Authorization Services: First Data Resources, National Data Corporation and independent bank associations.
 - Medical Services: MCAUTO's Health Services Division, Shared Medical Systems and HBO & Company.
 - Accounting/Tax Services: CCH Computax, Comshare, Fastax, Computer Sciences and Reynolds and Reynolds.
 - Data Communication Services: GTE Telenet and AT&T.

KEY PRODUCTS AND SERVICES

- Tymshare's 1979 revenues by type of service are estimated as follows:

TYMSHARE REVENUE SOURCES

Service Type	Percent of Total	Revenue Value (\$ millions)
Processing services	85%	\$164.1
Software products	2	3.9
Professional services	2	3.9
Other (Tymnet, maintenance, rentals)	<u>11</u>	<u>21.2</u>
	100%	\$193.1

COMPANY HIGHLIGHT/TYMSHARE, INC.

- Approximately 70% (\$114 million) of Tymshare's processing services revenues were derived from remote computing and 30% (\$50 million) from batch services. A further breakdown of Tymshare's 1979 processing revenues is estimated as follows:

TYMSHARE PROCESSING SERVICE REVENUES

Type	Percent of Processing Services Revenues	Revenue Value (\$ million)
General applications	30%	\$ 49.2
Credit card processing	20	33.0
Accounting/tax services	18	29.6
Utilities	9	14.8
Medical	8	13.0
Government	7	11.5
Other industry specialty	<u>8</u>	<u>13.0</u>
	100%	\$164.1

- The Computer Services Group markets timesharing, batch services and several specialized turnkey products.
 - Tymshare's acquisitions and new product development in its timesharing, batch services and minicomputer product areas are targeted to financial institutions, manufacturers, telephone companies, accountants, government and health care services.
 - A profile of applications available on Tymshare's network and batch service bureaus is presented in Exhibit A.
 - Tymshare's distributed data processing offering, the Tymshare Model 1100 Intelligent Terminal, has been successfully installed in a number of sites. Designed to be used as a source data entry device, the system supports data capture, editing and validation.
 - Tymshare's Medical Systems group provides processing services to about 150 hospitals and health care institutions from data centers in Mahwah (NJ), Dallas and Milwaukee.
 - Hospitals are connected to one of the data centers by Four Phase IV 40s, 70s or 90s. Applications available include accounts payable, accounts receivable, general ledger, inventory and patient records.

EXHIBIT A

APPLICATIONS AVAILABLE ON TYMSHARE'S RCS
NETWORK AND BATCH SERVICE BUREAUS

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> • OPERATING ENVIRONMENT <ul style="list-style-type: none"> – IBM 370/3033, VM/CMS – AMDAHL V6, VM/CMS – XEROX 940s, TYMCOM IX – DEC SYSTEM 10, TYMCOM X • DISTRIBUTED PROCESSING CAPABILITIES <ul style="list-style-type: none"> – TYMSHARE MODEL 1100 INTELLIGENT TERMINAL – TYMCARE – MANUFACTS – IBIS • PROGRAMMING LANGUAGES SUPPORTED <ul style="list-style-type: none"> – APL – COBOL – ASSEMBLY – FORTRAN – BASIC – PL/1 • DATA MANAGEMENT SOFTWARE <ul style="list-style-type: none"> – FOCUS – RETRIEVE – IML – SYSTEM 1022 – MAGNUM – SYSTEM 2000 • DATA BASES AVAILABLE <ul style="list-style-type: none"> – TYMQUOTE SECURITIES DATA – CITIBASE TIME SERIES DATA BANK – SITE II DEMOGRAPHIC DATA (1980 CENSUS) • FINANCIAL APPLICATIONS/TOOLS <ul style="list-style-type: none"> – BASIC BUSINESS LANGUAGE (BBL) – EXPRESS – FINPACK (FINANCIAL ANALYSIS) – TYMTAB (FINANCIAL MODELING) • SCIENTIFIC AND ENGINEERING <ul style="list-style-type: none"> – GPSS – STRESS – MACE – TI MICROPROCES- – MSINC SOR SUPPORT – NATIONAL SEMICONDUCTOR LIBRARY – SPICE 	<ul style="list-style-type: none"> • MANAGEMENT SERVICES <ul style="list-style-type: none"> – CASH MANAGEMENT – BUDGET PLANNING AND ANALYSIS – PERSONNEL (PERS) – PROJECT MANAGEMENT (CRAM) – EARNINGS RECORD (ERS) – RAIL FLEET MANAGEMENT (RAILTRACK) • ACCOUNTANTS/TAX SERVICES <ul style="list-style-type: none"> – GENERAL LEDGER (FRS) – TIME REPORTING AND BILLING (TRS) – DYNATAX, UNITAX, DELTATAX, AUTOTAX, ESTAX • BANKING APPLICATIONS <ul style="list-style-type: none"> – INTERNATIONAL BANK INFORMATION SYSTEM (IBIS) – CREDIT CARD PROCESSING – MUNICIPAL BONDS (BONDBID) – CREDIT ANALYSIS (SPREAD) – LOAN ACTIVITY TRACKING – FIXED ASSET ACCOUNTING – ASSET LIABILITY MANAGEMENT • OTHER INDUSTRY SPECIFIC APPLICATIONS <ul style="list-style-type: none"> – TELEPHONE INDUSTRY – CABLE TV ACCOUNTING – MANUFACTURING (MANUFACTS) – FUEL OIL INDUSTRY – TRAVEL SERVICES – MEDICAL SERVICES • OTHER KEY PRODUCTS <ul style="list-style-type: none"> – STATISTICAL SAMPLING – SURVEY – STATPAK – AUGMENT – DISPLAA – TELL-A-GRAF – EASY PLOT

COMPANY HIGHLIGHT/TYMSHARE, INC.

- Hospital clients are concentrated in the Northeast, the upper Midwest, the South and California.
- Tymcare, an on-line patient data collection and communication system, is offered on a DEC 2020. Tymcare can operate as a standalone system or be used in a distributed processing environment.
- Applications available or under development for Tymcare are: admissions, nursing station/order entry and communications, laboratories, radiology, housekeeping, dietary, accounting and administrative tools.
- MANUFACTS, a manufacturing information system, is available on Tymshare's network and on DEC 2020 systems. It consists of several modules to support three functional areas of operation: manufacturing, accounting and marketing.
- Applications include sales order entry and invoicing, inventory control, purchase order accounting, bill of materials, work order, material requirements planning, accounts payable, accounts receivable and general ledger/financial reporting.
- MANUFACTS is marketed to small- and medium-sized companies and divisions of large corporations.
- Tymshare's International Bank Information System (IBIS) monitors, evaluates and controls a bank's international banking activities.
- Sold on DEC PDP 11/70 systems, IBIS contains modules for foreign exchange, commercial loans, demand deposits, general ledger/financial information, and money market, as well as a customer information file.
- Tymshare's tax processing services have grown from \$3 million to approximately \$25 million in annual revenues during the last five years.
- Of the five tax services offered, Dynatax and Unitax are the most widely used.
- DYNATAX is offered nationally from 23 data centers. It processes tax forms for federal and most state income tax returns.
- In 1980, Tymshare began offering its Dynatax Service on the Series 1100 intelligent terminal. Connected to one of its 23 data centers, the new offering reduces turnaround time by permitting data entry and editing to be done locally. Approximately 40 systems have been installed. Tymshare

COMPANY HIGHLIGHT/TYMSHARE, INC.

expects to have 100 systems in use by the start of the 1981 tax season.

- Unitax, a tax preparer's service, is marketed in seven western states, with the largest concentration of clients in southern California.
- Approximately \$14.8 million of Tymshare's revenue is derived from a variety of management and reporting systems for telephone companies, including computer aids in economic analysis, construction of new facilities, portfolio analysis, residential market studies and PBX maintenance scheduling. In addition, gas and electric utilities use information services to address resource planning and scheduling, tracking of power distribution among power companies and systems designed to monitor utility meters.
- The three major components of Tymshare's Financial and Network Systems Group are Transaction Services, Tymnet, Inc. and the EFT/Validata Division.
 - Revenues from Tymshare's Transaction Services (TTS) were \$33 million in 1979, a 32% increase over 1978 revenues of \$25 million. TTS provides sales draft processing, credit card authorizations, security services, plastic card embossing and cardholder accounting for VISA and Master Charge cards in 13 western states.
 - In May 1980, TTS announced an agreement with Telecheck Services to provide check guarantee services through the T3 digital telephone terminal marketed by Tymshare.
 - In July 1980, TTS headquarters were relocated to new facilities in Fremont (CA). The new facility provides for increased space and efficiency of operations.
 - Tymnet's 1979 non-captive revenues were \$16.2 million, up 56% over 1978 revenues of \$10.4 million. Operating profit increased almost 140% to \$3.1 million, versus \$1.3 million in 1978.
 - A new version of OnTyme, an electronic mail service, was introduced in March 1980. OnTyme II allows users to create messages on most commercially available terminals and automatically send them to facsimile terminals.
 - In May 1980, Tymnet announced a joint venture with M/A-COM and Satellite Business Systems to supply local data communications service in conjunction with SBS's intercity satellite service. Demonstration projects will operate in New York and San Francisco starting in January 1981.
 - TYME-GRAM, a new, low-cost, electronically originated mail service, became available on Tymnet in September 1980. Mes-

COMPANY HIGHLIGHT/TYMSHARE, INC.

sages from business customers are transmitted over the Tymnet network in ZIP code sequence to 30 strategically located metropolitan areas in the U.S., where they will be printed and inserted into envelopes. TYME-GRAMS then go to post offices for next-day metropolitan delivery.

- In July 1980, the Japanese government approved access to the Tymnet network in Japan via international record carriers. Tymnet is available in 29 countries and provides local dial-up to over 200 cities in all 50 States.
- Tymshare's electronic funds transfer service for financial institutions will be operational in the fourth quarter of 1980. The first phase will be a shared automated teller machine (ATM) network service to savings and loan institutions in southern California. Tymshare intends to expand this service to other financial institutions including banks and credit unions.
- Among new announcements from Tymshare's Technical Services Groups:
 - Tymshare's Travel Management Services (TTMS) signed a multiyear contract with Trans World Airlines to provide a new multiaccess terminal service for nationwide use by travel agencies.
 - Augment, Tymshare's office automation system, was extended to commercial clients in early 1980. Before this it was only available to government clients and internal users. A standalone version of Augment is in development.
- Revenues from software package sales are derived from banking packages sold to small- and medium-sized Burroughs installations.
- In international activities, Tymshare established a communications consulting subsidiary in Europe called Tymshare Network Systems Consulting S.A. Based in Paris, the subsidiary provides consulting services, which include the training of people and maintenance of equipment for organizations such as the European Postal Telephone and Telegraph administrations and international record carriers.

INDUSTRY MARKETS Tymshare's industry markets are estimated as follows:

- Manufacturing	20%
- Utilities	10
- Banking and finance	25
- Medical	8
- Distribution	4
- Government	9
- Services	24
	<hr/>
	100%

COMPANY HIGHLIGHT/TYMSHARE, INC.

GEOGRAPHIC MARKETS Approximately 95% of Tymshare's revenues are derived from geographic locations throughout the U.S. International sources, primarily Canada, Europe and Japan, account for 5%.

COMPUTER HARDWARE

- Tymshare maintains four remote computing centers in Palo Alto, Cupertino, Dallas and Valley Forge (PA). Computer equipment used for the network service consists of:
 - Eight IBM 370/158s, VM/CMS.
 - Three IBM 3033s, VM/CMS.
 - One Amdahl V6, VM/CMS.
 - Seventeen DEC System/10s, Tymcom X.
 - Twenty-one Xerox 940s, Tymcom IX.
- Tymshare's batch service bureaus provide applications services in support of tax processing, fuel oil, cable TV, accounting services and medical services. The centers, using a variety of IBM and Burroughs equipment, are located in:
 - Alabama (Birmingham).
 - California (San Francisco and Los Angeles).
 - Colorado (Denver).
 - Florida (Miami and Tampa).
 - Georgia (Norcross).
 - Illinois (Skokie).
 - Kansas (Wichita).
 - Kentucky (Lexington).
 - Massachusetts (Salem and West Springfield).
 - Michigan (Detroit).
 - Minnesota (Bloomington).
 - Missouri (St. Louis).
 - New Jersey (Mahwah).
 - New York (Syracuse).
 - North Carolina (Gastonia).
 - Oregon (Portland).
 - Pennsylvania (Blue Bell).
 - Tennessee (Nashville).
 - Texas (Houston).
 - Virginia (Springfield).
 - Wisconsin (Madison and Milwaukee).

COMPANY HIGHLIGHT

TYMSHARE, INC.
 20705 Valley Green Drive
 Cupertino, CA 95014
 (408) 446-6000

Thomas J. O'Rourke,
 Chairman And President
 Public Corporation, NYSE
 Employees: 2,750
 Total Revenues, Fiscal Year End
 12/31/78: \$149,559,000
 Computer Services Revenues:
 \$134,603,000 (est.)

THE COMPANY

- Since its founding in 1966, Tymshare has evolved from a remote computing services company specializing in scientific and engineering applications to a full computer services vendor which now also provides turnkey systems, software products, consulting services, and operates a data communications network.
- Tymshare has achieved an average annual growth rate in revenue of 30% for the last five years. Revenues for 1978 were \$149.6 million, up 48% over 1977 revenues of \$101.2 million. A five year financial summary follows:

TYMSHARE, INC.
 FIVE YEAR FINANCIAL SUMMARY
 (\$ Thousand, Except Per Share Data)

ITEM \ FISCAL YEAR	1978	1977	1976	1975	1974
Revenues	\$149,559	\$101,174	\$81,837	\$64,412	\$52,602
• Percent change from previous year	48%	24%	27%	22%	33%
Income before taxes and extraordinary item	19,394	15,808	13,163	9,858	6,710
• Percent change from previous year	23%	20%	34%	47%	53%
Net income	10,594	8,008	6,713	5,094(B)	3,638(B)
• Percent change from previous year	32%	19%	38%	40%	22%
Earnings per share	\$ 2.31	\$ 1.82	\$ 1.55	\$ 1.22	\$.91
• Percent change from previous year	27%	17%	27%	34%	21%

(B) Extraordinary item reported

COMPANY HIGHLIGHT/TYMSHARE, INC.

- Tymshare is organized into four operating groups: Computer Services, Financial and Network Systems, Technical Services, and International Operations.
 - Computer Services Group provides general timesharing and batch services through three operational areas:
 - Tymshare Medical Systems which provides computer services to hospitals and the health care industry.
 - Information Services which addresses the timesharing needs of companies in manufacturing, accounting, utilities, banking and finance, and government.
 - Professional Services provides batch, remote batch, and on-line processing to clients for tax returns, fuel oil, cable TV, banking, general ledger, and custom applications.
 - Financial and Network Systems Group consists of:
 - Tymshare Transaction Services which provides credit card processing services, electronic funds transfer, and credit authorization services.
 - Tymnet, Inc., an FCC-chartered common carrier licensed to provide data communication services.
 - Data Network Division which manufactures minicomputers used in network services, and markets dedicated network services using Tymnet technology and minicomputers.
 - Technical Services Group develops new software systems and products, provides hardware equipment support, as well as marketing certain technical products to industry and government. It includes:
 - Travel Services Division, the Western Twenty-nine acquisition, which provides accounting and reservation services to travel agents and tour operators.
 - Equipment Support (Valcomp) provides third party maintenance and refurbishing of computer equipment.
 - Office Information markets Augment, an integrated office automation system.
 - International Operations manages the remote computing services offered through Tymshare Canada and to affiliated companies located in England, West Germany, France, and Japan.
- Tymshare has continued to expand its services by internal development of new products and by means of acquisition. Recent acquisitions completed by the company are:
 - Autotax, Inc., acquired from The Research Institute of America in June 1978, provides income tax preparation services.
 - Medical Information, Inc. (MII) of Dallas, acquired in July 1978, provides accounting and financial reporting systems for hospitals.
 - Acquisition of Validata, a credit authorization division of TRW, Inc., was announced in May 1979. Validata marks the sixteenth major acquisition completed by Tymshare since 1970.

COMPANY HIGHLIGHT/TYMSHARE, INC.

- Tymshare has targeted the financial, health care, manufacturing, utilities, accounting, and government sectors as the key industries for expansion efforts.
- Major competitors of Tymshare's services are:
 - Remote Computing: GEISCO (General Electric), Service Bureau Company (CDC), National CSS, Automatic Data Processing, and Computer Sciences.
 - Credit Card Processing/Authorization Services: First Data Resources, National Data Corporation, and independent bank associations.
 - Medical Services: MCAUTO's Health Services Division and Shared Medical Systems.
 - Accounting/Tax Services: CCH Computax and Comshare.
 - Data Communication Services: GTE Telenet and AT&T.

KEY PRODUCTS AND SERVICES

- Tymshare's 1978 revenues are estimated as follows:

TYMSHARE
REVENUE SOURCES

Service Type	Percent of Total	Revenue Value (\$ million)
Processing Services	86%	\$128.7
Software Products	2	3.0
Professional Services	2	3.0
Other	10	14.9
Total	100%	\$149.6

- Approximately 85% (\$109 million) of Tymshare's processing services revenues were derived from remote computing and 15% (\$19 million) from batch services. A further breakdown of Tymshare's 1978 processing revenues is estimated as follows:

TYMSHARE
PROCESSING SERVICE REVENUES

Type	% of Processing Services Revenues	Revenue Value (\$ million)
General Applications	21%	\$ 27
Credit card processing	19	25
Accounting/tax services	19	25
Utilities	9	12
Tymnet (non-captive)	9	11
Medical	8	10
Government	7	9
Other industry specialty	8	10
	100%	\$129

- Software products and professional services contribute a minor portion of Tymshare's total revenues.
- The remaining revenue, \$14.9 million, was derived from terminal sales and rentals, maintenance, and equipment refurbishment contracts.
- The Computer Services Group, generating approximately 61% of Tymshare's total revenues, offers general timesharing and batch services in addition to the specialized applications for industries previously mentioned. A profile of the network service and key application areas is presented in Exhibit A.
 - New applications announced by Tymshare within the last two years are:
 - PERS: an integrated personnel administration and reporting system.
 - MANUFACTS: an integrated manufacturing, marketing, and accounting system for small to medium-sized companies and divisions of large corporations.
 - Tymshare's distributed data processing offering, the Tymshare Model 1100 Intelligent Terminal, announced in July 1979, incorporates a Texas Instrument TMS 9900 microprocessor, 1920-character video display, 64K of RAM, and a typewriter-style keyboard. A companion product, Model 1105, is a dual diskette drive which holds a total of 512K bytes of storage.
 - Designed to be used as a source data entry device, the system supports data capture, editing, and validation.
- Tymshare Transaction Services (TTS), contributed approximately 17% (\$25.2 million) towards total 1978 revenues. TTS did not contribute to net income, however, consequently reducing the company's 1978 operating profit margins. TTS in 1978 consisted of the operations of Western States Bankcard Association (WSBA), which Tymshare acquired in October of 1977. The 1978 "break-even year" for TTS was attributed to start-up costs and problems associated in turning a non-profitable operation into a profit making one.

EXHIBIT A
APPLICATIONS AVAILABLE ON TYMSHARE'S RCS NETWORK
AND BATCH SERVICE BUREAUS

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> • OPERATING ENVIRONMENT <ul style="list-style-type: none"> -- IBM 370/3033, VM/CMS -- AMDAHL V6, VM/CMS -- XEROX 940s, TYMCOM IX -- DEC SYSTEM 10, TYMCOM X • PROGRAMMING LANGUAGES SUPPORTED <ul style="list-style-type: none"> -- APL -- ASSEMBLY -- BASIC -- COBOL -- FORTRAN -- PL/1 • DATA MANAGEMENT SOFTWARE <ul style="list-style-type: none"> -- FOCUS -- IML -- MAGNUM -- RETRIEVE -- SYSTEM 1022 -- SYSTEM 2000 • DATA BASES AVAILABLE <ul style="list-style-type: none"> -- TYMQUOTE SECURITIES DATA -- SREA REAL ESTATE APPRAISAL -- NBER TIME SERIES DATA BANK -- SITE II DEMOGRAPHIC DATA • FINANCIAL APPLICATIONS/TOOLS <ul style="list-style-type: none"> -- BASIC BUSINESS LANGUAGE (BBL) -- DECISION SUPPORT SYSTEM (DSS) -- EXPRESS -- FINPACK (FINANCIAL ANALYSIS) -- TYMTAB (FINANCIAL MODELING) • SCIENTIFIC AND ENGINEERING <ul style="list-style-type: none"> -- GPSS -- MACE -- MSINC -- NATIONAL SEMICONDUCTOR LIBRARY -- SPICE -- STRESS -- TI MICROPROCESSOR SUPPORT 	<ul style="list-style-type: none"> • MANAGEMENT SERVICES <ul style="list-style-type: none"> -- CASH MANAGEMENT -- BUDGET PLANNING AND ANALYSIS -- PERSONNEL (PERS) -- PROJECT MANAGEMENT (CRAM) -- EARNINGS RECORD (ERS) • ACCOUNTANTS/TAX SERVICES <ul style="list-style-type: none"> -- GENERAL LEDGER (FRS) -- TIME REPORTING AND BILLING (TRS) -- DELTATAX, UNITAX, DYNATAX, AUTOTAX, ESTAX • BANKING APPLICATIONS <ul style="list-style-type: none"> -- INTERNATIONAL BANK INFORMATION SYSTEM (IBIS) -- CREDIT CARD PROCESSING -- MUNICIPAL BONDS (BONDBID) -- CREDIT ANALYSIS (SPREAD) -- LOAN ACTIVITY TRACKING -- FIXED ASSET ACCOUNTING -- ASSET LIABILITY MANAGEMENT • OTHER INDUSTRY SPECIFIC APPLICATIONS <ul style="list-style-type: none"> -- TELEPHONE INDUSTRY -- CABLE TV ACCOUNTING -- MANUFACTURING (MANUFACT) -- FUEL OIL INDUSTRY -- TRAVEL SERVICES -- MEDICAL SERVICES • OTHER KEY PRODUCTS <ul style="list-style-type: none"> -- STATISTICAL SAMPLING -- SURVEY -- STATPACK -- AUGMENT -- DISSPLA -- EASY PLOT

COMPANY HIGHLIGHT/TYMSHARE, INC.

- TTS currently provides credit card processing services to 270 member banks for Master Charge, Visa, and private label. Other associated services include credit authorization, cardholder and merchant accounting, and promotional material.
 - A major award by Crocker National Bank, announced in January 1979, gave Tymshare processing responsibilities for Visa accounts. This contract will contribute \$15 million to TTS revenues over the next 3½ years.
- Validata, which had revenues of about \$2 million at the time of purchase, will be integrated into TTS. Validata is used by counter personnel of airlines, car rental firms, hotels, and restaurants to obtain information about stolen credit cards, airline tickets, and to verify checks.
- In July 1979, Tymshare announced its electronic funds transfer (EFT) service for financial institutions. The EFT switch and other assets were acquired from Saving Association Central Corporation of Southern California. The first phase will be a shared automated teller machine (ATM) network service to savings and loan institutions in the San Fernando Valley which is scheduled to be operational during the first quarter of 1980. Tymshare intends to expand this service to other financial institutions including banks and credit unions.
- Revenues from Tymnet services were approximately \$16.5 million in 1978 and are expected to increase to over \$20 million in 1979. Approximately one-third of Tymnet's revenues (\$5.4 million) are derived from internal services provided to the Tymshare network.
 - Tymnet, the nation's largest public packet network, currently serves 180 U.S. cities and 23 foreign countries via international record carriers.
- In 1979 Tymshare also announced its entry into the turnkey systems markets with two offerings: IBIS and Tymcare.
 - IBIS (International Bank Information System) was installed at Societe Generale in January 1979, and sold to the Bank of Montreal in July 1979. Based on PDP-11/70 hardware, IBIS contains modules to support foreign exchange, commercial loans, demand deposits, general ledger/financial information, money market, and a customer information file. Tymshare has targeted IBIS sales to large banks with active international operations.
 - Tymcare, an on-line patient data collection and communication system, is designed for community hospitals. Applications supported include: admissions, transfer, discharge, accounting, and billing.
 - Based on DEC 2020 hardware, Tymshare plans to tie Tymcare to its network operation.
 - Hospitals targeted are in the over 200 bed range.
- MANUFACTS, the integrated manufacturing system, will also be available on a DEC 2020 computer. In addition to several basic accounting modules,

COMPANY HIGHLIGHT/TYMSHARE, INC.

applications available through MANUFACTS include: cost accounting, sales order entry and invoicing, inventory control, bill of materials, work order, materials requirement planning, shop floor control, production scheduling, and capacity planning.

- Augment, Tymshare's office automation product acquired from Stanford Research Institute, is available through the network service. Development is underway to package it for in-house users on DEC 2020 computers.
 - Augment handles everything from initial note-taking through writing, editing, collaborating, revising, communicating, and typesetting. It includes the ability to support graphic terminals and can generate line art. It can function as a programming tool, access data bases, and communicate with other systems.
- Tymshare has yet to officially announce a minicomputer offering in connection with their network service. The company appears to be moving more towards the development of specialized applications to offer on a minicomputer (IBIS, MANUFACTS, Tymcare, and Augment) with the intention of connecting these to the network.
- Tymshare's Travel Management Services was reorganized in 1979 and is currently directing marketing efforts away from the smaller travel agencies and the airline reservation business. Current marketing emphasis is on automated reservation, ticketing, accounting and management reporting services for large tour operators and large travel agencies, as well as hotel chains. Travel Services are currently offered via the Tymnet network.
- Tymshare's software package marketed to in-house users consists of an integrated system for small to medium-sized banks. It operates on Burroughs equipment and is sold out of Tymshare's Birmingham, Alabama office.
- Professional service revenues are derived primarily in support of application development activities for new and existing customers of the Computer Services Group.

INDUSTRY MARKETS Tymshare's industry markets are estimated as follows:

-	Manufacturing	20%
-	Utilities	10
-	Banking and finance	25
-	Medical	8
-	Distribution	4
-	Government	9
-	Services	<u>24</u>
		100%

GEOGRAPHIC MARKETS Approximately 95% of Tymshare's revenues are derived from geographic locations throughout the U.S. International sources account for 5%, primarily Canada, Europe and Japan.

COMPUTER HARDWARE

- Tymshare maintains three remote computing centers located in Palo Alto, California, Houston, Texas, and Valley Forge, Pennsylvania. Computer equipment used for the network service consists of:
 - Eight IBM 370/158s, VM/CMS.
 - Two IBM 3033s, VM/CMS.
 - One Amdahl V6, VM/CMS.
 - Seventeen DEC System/10s, Tymcom X.
 - Twenty-six Xerox 940s, Tymcom IX.
- Tymshare's batch service bureaus mainly provide application services in support of tax processing, fuel oil, and cable TV. Batch centers are located in Colorado, Alabama, Florida, Kansas, New York, Kentucky, Massachusetts, Michigan, Missouri, Pennsylvania and Wisconsin. The centers use a variety of IBM and Burroughs equipment.

COMPANY	TOTAL DEDUCTIONS - TOTAL LEASE EDB				ACQUIRED COMPANY	ACQUISITION INFORMATION		
	1978	1977	1976	1975		Place	Date	Rev.
3. Rd R 9/30 Approx EDP	kmcs-66.58	113.82	94.87	82.44				
	kmcs. 33.08	58.00	36.00	29.00				
4. Shared Medical Systems 12/31		45.69	35.47	22.56	Hosp Cpr Ctr.		10/75	4.1m
5. 1/2 share 12/31	101.17 2m Regs 33m-75 4.2m 75-3.1m ± \$ 10m or 2man 600 eng.	101.17 2m Regs 33m-75 4.2m 75-3.1m ± 202m 3.6m 35-4m 2.5-4m 12/74 13.5m	81.84 purch pool pooling purch purch. pool not dec not dec pool	64.41 ± 1.5m 4977 cars to 1m-6m- 4977 cars to 1m-6m- 4977 cars to 1m-6m-	tried to acquire lasco Response Sys Qualex Data Sys. Unitair Medical Data Sys. Welkin 29 USBA Simplified DP Medical Info Sys ? Carter Associates Auto fax (From the Legends of Miller) linked Data Center	1975 NY Longridge CA Anaheim Mahwah NJ SF SF Tallahassee CA	12/75 12/75 8/76 6/76 6/76 10/77 10/1976 1978 late 78? 1978 12/74	repair/rehub eq tax returns med-fax's address travel indus 6.1m fuel oil tax
IF 6 MOS- etc tumor.								



COMPANY

TYMSHARE / RCS

FY

12/31

FISCAL YEAR	ANNUAL REVENUE (\$millions)	ANNUAL GROWTH RATE (%)	COMMENTS
1971	<u>13</u>	<u>23</u>	
1972	<u>16</u>	<u>50</u>	
1973	<u>24</u>	<u>33</u>	
1974	<u>32</u>	<u>25</u>	
1975	<u>40</u>	<u>20</u>	
1976	<u>48</u>	<u>27</u>	
1977	<u>61</u>		
1978	<u>75</u>	<u>30 %</u>	Previous years Average
		<u>23 %</u>	1977-1978
		<u>25 %</u>	Max Rate Projected
		<u>18 %</u>	Min Rate Projected
1979	<u>94</u>	<u>89</u>	<u>92</u>
1980	<u>117</u>	<u>104</u>	<u>111</u>
1981	<u>140</u>	<u>123</u>	<u>135</u>
1982	<u>163</u>	<u>145</u>	<u>164</u>
1983	<u>229</u>	<u>170</u>	<u>200</u>

sketch → Dave Jung (CA)
cc Bernard Goldstein (East)
cc Paula Flatt (CA)

COMPANY HIGHLIGHT

TYMSHARE, INC.
20705 Valley Green Drive
Cupertino, CA 95014
(408) 446-6000

Thomas J. O'Rourke,
President & Chairman
Public corporation, NYSE
Total employees: 1500
Total revenues, fiscal year
end 12/31/76: \$81,837,000
F2 = 70,377,000

THE COMPANY

12/77 FI- 101.17m

- Tymshare was founded in 1966 as an interactive remote computing services vendor specializing in scientific and engineering applications. It is now an international company providing a wide range of general purpose business and more specialized applications-oriented computer services. Services are offered to approximately 6,500 businesses in 40 different industry sectors and utilize a variety of delivery modes.
- In August 1976, Tymshare announced a reorganization of its marketing organization. The 400 person staff is now divided into three areas:
 - Information Services, providing remote computing services to the financial, accounting, petrochemical, and utility industries, and government agencies.
 - Industry Services, provides specialized remote computing and batch processing services to selected industries. Services include income tax, CATV, fuel oil dealer and distributor, medical, and travel agency processing.
 - Marketing Services, managing product planning, services and terminal marketing and support, training, and personnel development functions.
- The company's revenues grew from \$64.4 million in 1975 to \$81.8 million in 1976, a 27% increase. During the same time, net earnings grew 31% from \$5.1 million to \$6.7 million. At FY end 1976, earnings per share were \$1.55 with 4.2 million shares of common stock outstanding. Tymshare has a debt:equity ratio of 0.2:1.

Series 7 index
co.; la has mkt,
oper; docs.

- Acquisitions
Autotax - 1978 (From the Research Inst of Amer.) - tax docs

9/77

COMPANY HIGHLIGHT/TYMSHARE, INC

- Tymshare is aggressively expanding its international services through a series of joint ventures, investments and acquisitions as shown below:

Affiliate	Country	Partner	Year Est.	Owner-ship	1976 Sales Volume*
CEGOS-TYMSHARE	France, Holland, Belgium, Switz.	Credit Lyonnais	1969	45%	\$5 M
Tymshare, U.K.	United Kingdom	Unilever	1974	66	1 M
Talorix-Tymshare	West Germany	Taylorix	1976	65	0
Kokusai-Tymsahre Ltd	Japan	Marubeni Corp	1976	45	0
SLIGOS S.A.	France	acquisition	1976	20	\$40 M

* INPUT Estimate

- Talorix-Tymshare is a recently formed joint venture scheduled to begin operations in 1977. It will increase the proportion of Tymshare's international to domestic revenues in future years.
- Tymshare purchased \$3 million worth of SLIGOS stock and convertible notes in 1976. If converted, they would give Tymshare a 20% interest in SLIGOS S.A. Credit Lyonnais is SLIGO's major shareholder.
- Kokusai-Tymshare Ltd services in Japan have been delayed pending Japanese government approval of Tymshare's telephone line service in Japan. In April 1976 the Japanese government announced liberalization of policy granting phone lines to foreign vendors but individual licenses have not yet been granted.
- In 1976, Tymshare completed acquisitions of:
 - Medical Data Systems, a medical data processing company
 - Unitax, Inc., a low-cost computerized tax processing vendor
 - Western Twenty Nine, Inc., a vendor of remote computing services to the travel industry.
 - Simplified Data Processing, Inc., an online Telefuel service vendor.

COMPANY HIGHLIGHT/TYMSHARE, INC.

- In 1977, Tymshare has acquired (subject to approval by WSBA member banks) the Western States Bankcard Association (WSBA) credit card processing operations. WSBA, an approximately \$20 million per year business, serves 270 banks with 6,000,000 Master Charge and VISA cardholders. Provided Tymshare can successfully defend this base, the acquisition will provide a large base for expansion of services to financial institutions and consumers.
- Tymshare's aggressive acquisition and diversification program, mature stable management, base of 5,600 customers, industry specialization, and excellent financial record make Tymshare a leading independent computer services vendor.
- In the third quarter of 1976, Tymshare offered its users a discount of approximately 40% on off-hours processing. The resulting unexpected switch by some customers to off-hours processing caused a temporary slowdown in revenues and profits growth. This has now been absorbed and historic growth has resumed.
- One out of three of Tymshare's 1500 employees works in sales, marketing, or marketing support, indicating the company's strong commitment to that function. Approximately 10% of the employees work in R&D.

KEY PRODUCTS AND SERVICES

- INPUT estimates that Tymshare's 1976 revenues were derived as follows:

- Processing services	83%	97
Remote computing	64	75
Batch	19	22
- Software products	2	2
- Professional Services (TASC)	1	1
- Terminal sales and rentals	5	100
- Maintenance and Refurbishment	5	
- Tymnet	4	
	100%	

- Tymshare provides both batch and remote batch processing. Batch processing, expanded with the acquisition of United Data Centers, provided almost 20% of revenues in 1976.

COMPANY HIGHLIGHT/TYMSHARE, INC.

- Tymshare rents or sells terminals to its services customers. The terminals are purchased on a high volume OEM basis, providing Tymshare with a margin to market the terminals. Primarily offering teleprinter terminals on a rental basis, Tymshare has recently also begun to market intelligent and remote batch terminals.
- The company refurbishes used equipment through its Valcomp division.
- In December 1976, Tymnet, Inc., Tymshare's wholly owned subsidiary, became an FCC-licensed, value-added common carrier network. It can now be utilized not only for interconnection between Tymshare and its computer services customers, but also for connecting other customers' computer/terminal equipment and for message switching services. The company claims to offer more advanced features and cost advantages than Telex or TWX.
- Some of the industry and application specialized processing services provided by Tymshare are:

	<u>% of Total Rev.</u>
- Tax Returns	10
- Retail Fuel Oil Dealer Accounting	5
- Cable T.V. Accounting	1
- Medical Health Care	4
- General business and financial applications	9

- Tymshare has either developed or acquired advanced software tools, including:
 - Magnum, a relational data base management system introduced in 1975, is now a major revenue generator.
 - Express, a product of Management Decision Systems, Inc. distributed by Tymshare, provides specialized cross industry problem solving tools for market research and planning, particularly in the consumer products field.
 - FOCUS, an IBM 370 based high level information management system developed by Information Builders Inc. and introduced in 1976.
 - PERS, a new Personnel Evaluation and Reporting System
- The company is currently developing new specialized products for financial, manufacturing and production control, and marketing functions in medium and large organizations.

COMPANY HIGHLIGHT/TYMSHARE, INC.

APPLICATIONS

- INPUT estimates that Tymshare's 1976 processing services revenues were generated as shown below:

<u>Type of Service</u>	
General Business	15%
Specialty	30%
Scientific & Engineering	10%
Utility (including use of DBMS software: MAGNUM, EXPRESS, etc.)	<u>45%</u>
TOTAL	100%

INDUSTRY MARKETS

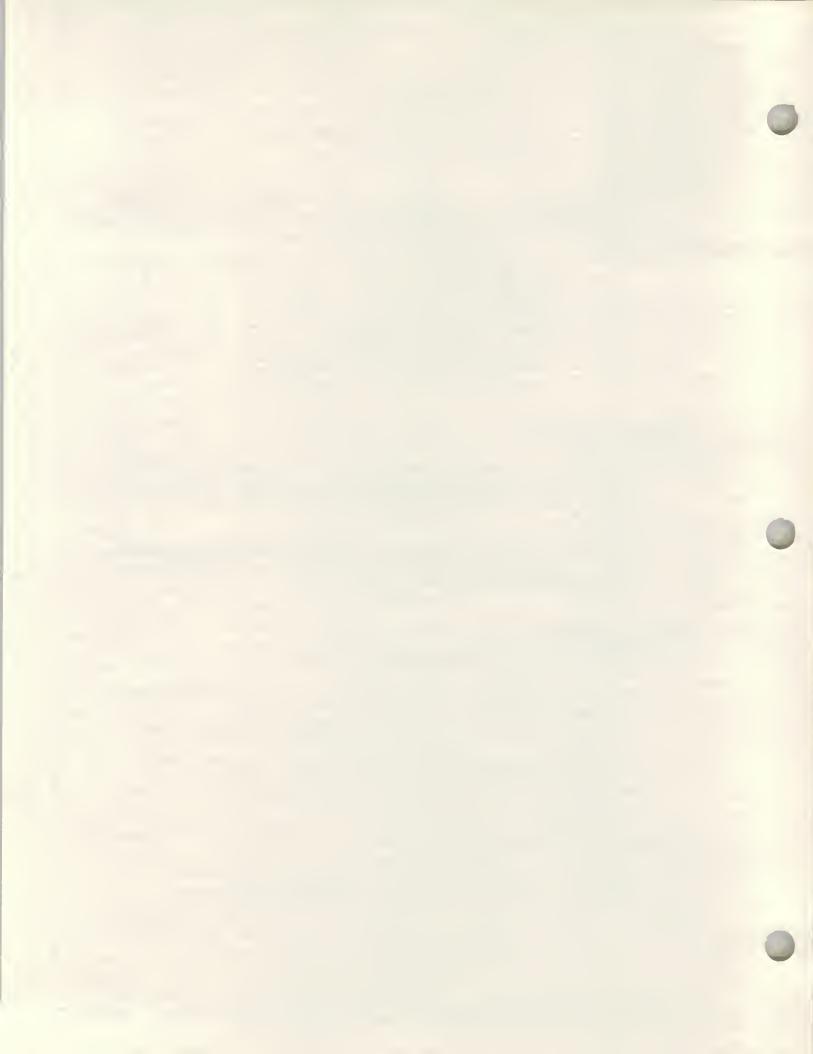
- Tymshare's more than 5600 users come from a variety of industries, including telephone, petroleum, banking and finance, insurance, medical, government, manufacturing, accounting, retail distribution, and other.
- The Federal Government generated less than 6% of total revenues in 1976. Management has indicated that efforts to expand penetration of this market are underway.

GEOGRAPHIC MARKETS

- Tymshare's principal marketing locations are:
 - Information Services: all major cities in the U.S. as well as Toronto, Canada.
 - Industry Services: most major metro areas plus 12 secondary cities.
 - International Affiliates: Brussels, London, Paris, Tokyo, The Hague, and Frankfurt.
 - Tymnet, Inc.: Cupertino, Houston, and Rockville (MD).

COMPUTER HARDWARE AND SOFTWARE

- Tymshare uses four IBM 370/158s, a variety of IBM models, 10 DECsystem 10s, 27 Xerox 940s, and 4 Burroughs computers.



COMPANY HIGHLIGHT

TYMSHARE CORPORATION *Incorporated*
20705 Valley Green Drive
Cupertino, California 95014
(408) 257-6550

Tom O'Rourke, President
Public corporation
Total company and computer services
sales as of FY ending 12/75:
\$56,442,669

NUMBER OF EMPLOYEES engaged in computer services: 1500

KEY PRODUCTS/SERVICES: Tymshare offers primarily remote computing services, some batch services and limited facilities management and software services. These represent 65%, 20%, 10% and 5% of sales, respectively. Information analysis and applications services are business oriented whereas, computer languages available, such as FORTRAN, BASIC, COBOL, and SNOBOL, are directed at the technical and engineering communities. Batch services, available through Data Centers Division include:

- Dynatax, which provides tax computation to accounting firms.
- CABLEFAX, which bills residential subscribers
- Computafuel, which is used by oil dealers to determine fuel distribution routes.

TYMNET is Tymshare's remote computing network. The Valcomp Division rebuilds and restores computer equipment. As a convenience to users, Tymshare also makes terminals available to users on a rental basis.

APPLICATIONS: Half the applications offered by Tymshare are general business; the balance is split fairly evenly between scientific calculations and data base. Key applications include:

- | | |
|---------------------------------|----------------------------|
| • Data base and data management | • Sales order entry |
| • Tax (DYNATAX) accounting | • Inventory control |
| • Financial planning | • Production control |
| • Corporate planning | • Quality control |
| • Accounting | • Engineering |
| - general ledger | • Research and Development |
| - accounts receivable | • Distribution |
| - accounts payable | • Hospital accounting |
| • Cash flow reporting | |

COMPANY HIGHLIGHT/TYMSHARE CORPORATION

Programming language categories available include the following:

- Linear programming
- Text editing & programming languages
- Plotting
- Plotter demonstrations
- Demonstration
- Utility
- Simulation
- Structural engineering
- Electrical engineering
- Statistics
- Subroutines for FORTRAN
- Business forecasting/analysis

A series of Amos Tuck Business School programs is also available upon request. Applications are financially oriented: lease analysis, mortgage computation, stock evaluation, economic and financial analyses, and forecasting.

INDUSTRY MARKETS: Tymshare customers, of which there are more than 4,000, are concentrated in the manufacturing and utilities industries, which account for 40% and 20% of sales respectively. Several petroleum companies and the major Bell System companies are users. Users are also somewhat concentrated in the banking, financial and government areas.

GEOGRAPHIC MARKETS: In addition to its foreign affiliates in Belgium, England, and France, Tymshare has branch offices located throughout the United States in major metropolitan areas. Branch office cities are as follows:

Arlington, Virginia	Denver, Colorado	Portland, Oregon
Atlanta, Georgia	East Hartford, Connecticut	Rochester, New York
Bala Cynwyd, Pennsylvania	Houston, Texas	San Diego, California
Baltimore, Maryland	Livonia, Michigan	San Francisco, California
Baton Rouge, Louisiana	Los Angeles, California	Santa Clara, California
Bloomington, Minnesota	Milwaukee, Wisconsin	Seattle, Washington
Buffalo, New York	New Orleans, Louisiana	St. Louis, Missouri
Chicago, Illinois	Newport Beach, California	Syracuse, New York
Colton, California	New York, New York	Union, New Jersey
Dallas, Texas	Palo Alto, California	West Newton, Massachusetts
Darien, Connecticut	Pittsburgh, Pennsylvania	

COMPUTER HARDWARE AND SOFTWARE:

25	Xerox 940s	customized software	Cupertino, Valley Forge
			Houston
10	DEC-10s	customized software	Cupertino
3	IBM 370/158s		Palo Alto, Valley Forge
1	Burroughs 4700		
2	Burroughs 3500s		

In addition, IBM 360/30s, 360/40s and 360/50s are installed in batch data centers in Birmingham, Alabama; Blue Bell, Pennsylvania; Denver, Colorado; Madison, Wisconsin; Miami, Florida; Salem, Massachusetts; Springfield, Massachusetts; and Syracuse, New York; Wichita, Kansas.

COMPANY HIGHLIGHT/TYMSHARE CORPORATION

OVERALL ASSESSMENT AND TRENDS: Marketing and customer orientation have been the forte of Tymshare. Users are well aware of the attentive sales and technical support staff. Because of its industry-oriented selling and acquisition stance and overall strong market penetration, Tymshare should be able to double or triple sales by 1980. Electronic funds transfer and medical applications will represent a larger share of sales by that time.

Most of the top managers, comprised of Tom O'Rourke, Ronald Braniff, Alden Heintz, Warren Prince, Edward Field and others, were either founders of Tymshare in 1966, or they joined the firm shortly thereafter. They are also somewhat older and more experienced in the computer services industry than management in many competing firms. In addition, Tymshare management has adapted a conservative approach to accounting procedures. For example, it has amortized tax credits such that reported earnings are conservatively stated, and has chosen to defer development costs although many firms have. As a result, Tymshare has now matured into a profitable and leading multi-service vendor.

